Comparative Financial Regulation: The Analytical Framework

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We thank Eugenia Machiavello, Paolo Saguato, and the other participants in the ACLE-EY Workshop on Comparative Financial Regulation for valuable feedback. Usual disclaimers apply.

Abstract

Financial markets play a significant role in channeling funds from surplus spending units (fund givers) to deficit spending units (fund takers). Whether financial intermediation is carried out by banks or capital markets, market failures are ubiquitous and call for financial regulation. This chapter studies how different jurisdictions cope with market failures in banking and capital markets with a focus on how such market failures are addressed in different jurisdictions. We identify significant divergences in financial regulation despite the similarity of market failures. The drivers of such divergences are the private law underpinnings of financial markets, diverging policy objectives and regulatory goals, and the varying structure of financial markets. However, in the past few decades, there has been significant harmonization and convergence of financial regulation at the global level. We identify two main drivers of convergence: convergence with the aim to reduce transactions costs for cross-border transactions, mainly driven by pressure from industry associations; and convergence in financial regulations to address risk spillovers and prevent potential race-to-the-bottom from regulatory arbitrage. Discussing the drivers of divergence and convergence in financial regulation, this chapter provides an analytical framework for the comparative analysis of financial regulation.

Keywords: Comparative Law & Economics, Financial Regulation, Banking, Capital Markets, Regulatory Convergence, Regulatory Competition

JEL Classifications: G20; K22; P51

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Comparative Financial Regulation: The Analytical Framework

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ABSTRACT

Financial markets play a significant role in channeling funds from surplus spending units (fund givers) to deficit spending units (fund takers). Whether financial intermediation is carried out by banks or capital markets, market failures are ubiquitous and call for financial regulation. This chapter studies how different jurisdictions cope with market failures in banking and capital markets with a focus on how such market failures are addressed in different jurisdictions. We identify significant divergences in financial regulation despite the similarity of market failures. The drivers of such divergences are the private law underpinnings of financial markets, diverging policy objectives and regulatory goals, and the varying structure of financial markets. However, in the past few decades, there has been significant harmonization and convergence of financial regulation at the global level. We identify two main drivers of convergence: convergence with the aim to reduce transactions costs for cross-border transactions, mainly driven by pressure from industry associations; and convergence in financial regulations to address risk spillovers and prevent potential race-to-the-bottom from regulatory arbitrage. Discussing the drivers of divergence and convergence in financial regulation, this chapter provides an analytical framework for the comparative analysis of financial regulation.

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Table of Contents

1. Introduction

Financial markets are essential for society. The financial market development is an important aspect of the development of modern institutions.[1] While the relevance of financial markets is a constant throughout the history of mankind,[2] in modern economies they are ubiquitous and shape economic decisions of private and public actors like never before.[3] This is a global phenomenon. However, financial law remains national or regional despite the efforts toward global convergence.

In this chapter, we develop an analytical framework to study the role of law in finance and how to approach financial regulation from a comparative perspective, identifying the forces of convergence and divergence in different jurisdictions. The comparative exercise is relevant along several dimensions. First, it helps understand the different preferences of policymakers across time and space. For instance, if Country A tightly regulates banks compared to Country B or compared to what country A used to do in previous years, this reveals a specific set of social, economic, and political preferences that result in financial regulation. Second, a comparative approach to financial regulation helps detect the underlying forces of convergence and divergence shaping regulation in different areas of finance and different jurisdictions. Third, a comparative approach to financial regulation can also provide insights into the desirable legal tools and level of harmonization for the new challenges posed by an ever-evolving financial system, such as financial transactions happening in the blockchain or the growing interest in sustainable finance. This chapter doesn't aim to identify the efficient degree of harmonization. However, it provides some guiding principles.[4]

We first discuss the micro-foundation of financial markets and look at the theory of financial intermediation, showing that intermediation is inherent to financial transactions.[5] We move on to explain why financial intermediation is prone to market failures. We then explore the role of the law. Having observed that financial markets are legally constructed, in Section 2 we discuss how the law can correct market failures. In Section 3, we categorize the drivers of convergence and divergence in four groups. First, the underlying national private laws, in particular property and contract law, provide the legal basis for financial contracts and for financial entities to carry out financial transactions. Second, different regulators may pursue different policy goals or use different legal tools while pursuing the same goal. Third, financial regulators must account for the

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[1] Franklin Allen and Douglas Gale, *Comparing Financial Systems* (MIT press 2001) 25.

[2] See, for instance, Peter Temin, 'Financial Intermediation in the Early Roman Empire' (2004) 64 The Journal of Economic History 705.

[3] A process called 'financialization', see Gerald A Epstein, *Financialization and the World Economy* (Edward Elgar Publishing 2005).

[4] On the promises and limitation of comparative law & economics methodology, see Nuno Garoupa and Thomas S Ulen, 'Comparative Law and Economics: Aspirations and Hard Realities' (2021) 69 The American Journal of Comparative Law 664.

[5] On the tension between financial intermediation and the hype on financial disintermediation, see Fatjon Kaja, Edoardo D Martino and Alessio M Pacces, 'FinTech and the Law and Economics of Disintermediation', *Routledge Handbook of Financial Technology and Law* (Routledge 2021).

different structure and degree of integration of financial markets. Fourth, regulators are exposed to a set of other, heterogeneous forces shaping their policymaking. Based on the economic rationales and the drivers of convergence and divergence, we apply our comparative framework to the capital markets, banking and the hybrid sectors of the financial system (Section 4). We conclude in Section 5.

2. From financial markets to financial regulation

2.1 Financial markets and financial intermediaries

Financial markets are the institutions allowing a society to mobilize capital. Financial markets facilitate exchanges through the payment system, mobilize savings of fund givers and select projects of fund takers. In so doing, financial markets manage and allocate financial resources and risks across the economy.[6] Ideally, financial regulation copes with the market failures in mobilizing savings and allocating capital to the projects that generate the highest social value.

Capital allocation relies on some form of intermediation. In this context, we define intermediation broadly, as any subject, institution or technology that facilitates the interaction between fund takers and fund givers employing some degree of centralization. To understand why intermediation is pivotal, imagine an economy where only spot transactions are possible. A potential fund taker needs finance for her project, but potential fund givers cannot observe if it is a 'good' or a 'bad' project. This informational asymmetry prevents uninformed fund givers from pricing their risk correctly and they are forced to average the risk of high- and low-quality projects. Hence, low-quality projects dominate the market because they are the only ones willing to accept a higher cost of capital. This phenomenon is called adverse selection.[7] Fund givers could produce, at a cost, information about the quality of the projects. However, the information may not be reliable.[8] Moreover, if an agent could produce reliable information, which could be used by other agents free of charge, no agent would have incentive to produce information because of free riding.[9] The result of this completely disintermediated financial market is suboptimal because funds will not be allocated efficiently. Financial intermediation has emerged to address asymmetric information and allow intermediaries to profit from the generation of reliable information.[10]

While the forms of financial intermediation vary over time and across jurisdictions, intermediation is inherent to finance. Intermediary-based financial markets are the result of the inability of spot

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[6] John Armour and others, *Principles of Financial Regulation* (Oxford University Press 2016) 24–26..
[7] On the detrimental effects of adverse selection in finance, see Stephen Morris and Hyun Song Shin, 'Contagious Adverse Selection' (2012) 4 American Economic Journal: Macroeconomics 1.
[8] Jack Hirshleifer and others, 'The Private and Social Value of Information and the Reward to Inventive Activity' (1971) 61 American Economic Review 561.
[9] Sanford J Grossman and Joseph E Stiglitz, 'On the Impossibility of Informationally Efficient Markets' (1980) 70 The American economic review 393.
[10] For a formalization of this intuition, see John H Boyd and Edward C Prescott, 'Financial Intermediary-Coalitions' (1986) 38 Journal of Economic theory 211.

market transactions to efficiently allocate capital in complex societies. In this framework, the disintermediation debate can be understood as a process of designing new, often technologically-enabled and admittedly more efficient, intermediation mechanisms performed by new agents such as algorithms (or their coders) and data analysts.

The traditional distinction of financial intermediaries is between financial institutions and capital markets participants. Such distinction is simplistic in many respects because there are overlaps. However, it remains conceptually useful because institutions and markets employ different strategies to generate information about the efficient allocation of funds and to generate trust among agents. This is best understood by looking at the two extreme cases: on the one hand, banks performing 'heavy' intermediation; on the other, the securities market, where arm's length transactions are supported by 'light' intermediaries, such as broker-dealers, guaranteeing the quality of information available to agents.

Banks engage in 'Qualitative Asset Transformation' whereby they borrow short-term, liquid, and riskless funds, such as insured deposits or repos, and use the borrowed funds to finance long-term, illiquid, and risky projects. This results in a mismatch between the maturity, liquidity and risk profile of assets and liabilities of the banks. This construction, albeit inherently fragile, provides key services to society. In normal times, a bank can withstand this fragile construction acting as delegated monitor.[11] Since fund givers are unwilling to generate information about the creditworthiness of borrowers, banks attract them by doing the monitoring on their behalf while promising safety and liquidity. Moreover, banks specialize in generating superior, nonpublic information to minimize credit risk, pooling together a diversified portfolio of loans and mortgages.

The key to support the business model of a bank is to safeguard the borrowers' trust of bank solvency.[12] To achieve this result, bank debt should be information insensitive, meaning that bank borrowers, mainly depositors, have no incentives to acquire private information about the solvency of the borrowing bank.[13] For depositors, deposit insurance is the paradigmatic device to ensure information insensitivity. This device allows banks to borrow cheaply and lend at higher rates to support the delegated monitoring and screening activities.

On the other side of the spectrum, capital markets generate information on which market players can rely for their saving and investment decisions. While the agents and transactions of the capital markets are heterogenous, they all aim to match fund givers and fund takers. Again, this matching does not arise spontaneously but requires intermediaries. Stock exchanges, clearing houses,

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[11] Douglas W Diamond, 'Financial Intermediation and Delegated Monitoring' (1984) 51 The review of economic studies 393.
[12] Douglas W Diamond and Philip H Dybvig, 'Bank Runs, Deposit Insurance, and Liquidity' (1983) 91 Journal of political economy 401.
[13] Tri Vi Dang, Gary Gorton and Bengt Holmström, 'The Information View of Financial Crises' (2020) 12 Annual Review of Financial Economics 39..

custodians, and other participants allow the market to function. Other intermediaries support fund takers and fund givers in their activities, such as underwriters, brokers, and financial advisors.

Capital market intermediaries generate and disseminate reliable information on the quality of the investment projects, under the assumption that such information will be unbiasedly incorporated in the securities price.[14] These intermediaries appropriate the gains from generating information, for instance via brokerage fees and the bid-ask spreads from securities trading. In principle, the price determined by capital markets should guide the efficient allocation of funds between borrowers and lenders.

2.2 Intermediaries, market failures and financial regulation

The existence of intermediaries does not eliminate market failures. On the contrary, financial intermediaries may generate new market failures. Finance is one of the most regulated industries. There are two related but conceptually different rationales. First, the law underpins financial markets and support the reliability of key intermediaries.[15] Second, the law counters abusive and inefficient behaviors of these intermediaries. These rationales are related insofar as the same legal tool may address both. Sometimes, however, legal tools aiming at increasing the intermediaries' reliability generate additional inefficiencies which we label regulatory failure.

Financial intermediaries emerge to cope with adverse selection. However, intermediaries may run in the same problem if the information they produce is not reliable. In this situation, the law should support intermediaries to foster efficient capital allocation, for instance providing deposit insurance to maintain information insensitivity.

Commercial banks raise capital by 'transforming' short-term liquid liabilities into long-term illiquid assets. The promise of short-term liquidity is only sustainable for private institutions in 'good times.' In contrast, during crises, depositors would 'run' in case of adverse perception of a bank's solvency. Deposit insurance supports the promise of short-term liquidity provided by banks in any circumstance. The downside of deposit insurance is that banks, facing no risk of runs, tend to take excessive risks and externalize the potential losses on taxpayers.[16] This, in turn, calls for further regulation, such as capital and liquidity requirements, resolution regimes, and other regulatory measures.[17]

In capital markets, intermediaries may be unable to signal their trustworthiness to overcome the adverse selection problem. A typical example of a legal tool supporting intermediaries' trustworthiness is licensing. The government screens and certifies the trustworthiness of capital market agents and includes them in the 'club' of agents that are allowed to carry out a certain

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[14] The so-called Efficient Capital Market Hypothesis, Eugene F Fama, 'Efficient Capital Markets: A Review of Theory and Empirical Work' (1970) 25 The journal of Finance 383.
[15] Katharina Pistor, 'A Legal Theory of Finance' (2013) 41 Journal of Comparative Economics 315.
[16] Franklin Allen and others, 'Moral Hazard and Government Guarantees in the Banking Industry' (2015) 1 Journal of Financial Regulation 30.
[17] Dewatripont, Mathias and Jean Tirole, *The Prudential Regulation of Banks*, vol 1 (MIT Press 1994).

activity, such as asset management.[18] A license signals the trustworthiness of the advisor to potential investors. Investors will value the signal and trust the licensed asset management. Licensing works as signal if the requirements are costly enough to disallow mimicking by untrustworthy agents. For instance, to be licensed as financial advisor one must meet several requirements in terms of professional expertise and personal reputation.

Licensing as a legal tool is not only useful as signal to investors, it also plays a crucial role in regulating intermediaries. First, regulation usually targets licensed entities – the so-called entity-based regulation. For instance, licensed asset managers must truthfully disclose the information about the risk profile of the investment and must guarantee the suitability of the investment for the client. Imposing the same duties on any agent who carries out the activity of asset manager – so-called activity-based regulation – might not be as effective because monitoring a function is costlier for regulators than monitoring an entity. However, licensing creates a barrier to entry. If only licensed entities can compete in the market for asset managers, competition is restricted and efficiency is undermined.[19]

This example highlights a tradeoff between different goals: promoting competition, on the one hand, and limiting other market failures, on the other. The sources of market failure in capital markets differ from those of banking. In capital markets, information asymmetry is the main source of market failure, in banking the main source of market failure is the negative (systemic) externalities. Again, overlaps exists but this distinction remains useful to explain the different tradeoffs in the two contexts.

In capital markets, regulators are mainly concerned with information asymmetries between investors and their agents.[20] The paramount example in this regard is the prohibition of insider trading, whereby the agents – the inside management – can profit from nonpublic information they possess at the expense of the principals, namely the investors who only have access to public information. The prohibition of insider trading supports pricing based on unbiased, public information, attracting investors to liquid capital markets that allocate their capital efficiently.[21] However, the prohibition of insiders trading also reduces the speed with which information is incorporated in prices.[22]

In banking, regulators focus on the externalities from Qualitative Asset Transformation, which is a welfare-increasing way to overcome information asymmetries. The negative externalities of Qualitative Asset Transformation are potentially systemic because they can affect the whole economic system.[23] Banks pose systemic risks to the financial system because of their size,

[18] Licenses and entity-based regulation are employed also with banks; here the reference is specific to capital markets only for the sake of the example.
[19] Harold Demsetz, 'Barriers to Entry' (1982) 72 The American economic review 47.
[20] Anat R Admati and Paul Pfleiderer, 'Selling and Trading on Information in Financial Markets' (1988) 78 The American Economic Review 96.
[21] Zohar Goshen and Gideon Parchomovsky, 'The Essential Role of Securities Regulation' (2005) 55 Duke LJ 711.
[22] Henry G Manne, 'Insider Trading and the Administrative Process' (1966) 35 Geo. Wash. L. Rev. 473.
[23] Steven L Schwarcz, 'Systemic Risk' (2008) 97 Geo. LJ 193.

leverage, interconnectedness, and importance to the overall economy. Therefore, banks rely on governments implicitly guaranteeing their solvency which, in turn, generates moral hazard. Moral hazard means taking excessive risk because the downside is borne by someone else, in this case the governments which guarantee solvency. The consequences of moral hazard vary depending on the credit cycle. A bank takes excessive risks in periods of economic booms but foregoes profitable investments in times of crisis. This leads to credit crunch[24] and, when it concerns the entire banking system, may result in a severe contraction of the economy. In the aftermath of the 2007-2008 Global Financial Crisis (GFC), policymakers worldwide established 'macro-prudential' regulation to curb Qualitative Asset Transformation in good times to reduce probability and impact of systemic crises in bad times.[25]

The relationship between finance and regulation is not unidirectional, from the developments of financial intermediation to regulatory responses. On the contrary, the relationship is bidirectional because regulation can also drive the development of finance, shaping the way financial markets emerge and evolve.[26] A paradigmatic example is the peculiar structure of banks in the US characterized by holding companies controlling commercial banks. This arrangement derives from the structural separation of commercial and investment banking in the US established by the Glass-Steagall Act of 1932 and the Bank Holding Company Act of 1956.[27] This regulatory-driven development proved sticky: it did not disappear after the repeal of the Glass-Steagall in the 1990s. Consequently, a new version of structural regulation after the GFC was easier to implement in the US than in Europe. In the US, the Volcker Rule – prohibiting proprietary trading and banking entities' investment in and sponsorship of private funds - was part of the post-crisis Dodd-Frank legislation. In contrast, structural reform was proposed and widely debated, but never adopted at the EU level, despite the adoption of certain variations of it at the Member State level.

Profit-seeking market players participate in the production of regulation. They look for regulatory loopholes as opportunities for arbitrage.[28] Regulatory arbitrage can promote innovation and more

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[24] For a formal explanation of such a counterintuitive risk incentive, see Stewart C Myers, 'Determinants of Corporate Borrowing' (1977) 5 Journal of financial economics 147.

[25] Daniel K Tarullo, 'Macroprudential Regulation' (2014) 31 Yale J. on Reg. 505.

[26] Dan Awrey, 'Toward a Supply-Side Theory of Financial Innovation' (2013) 41 Journal of Comparative Economics 401, 413.

[27] Dafna Avraham, Patricia Selvaggi and James I Vickery, 'A Structural View of US Bank Holding Companies' (2012) 18 Economic Policy Review 65, 3.

[28] Arbitrage is "the exploitation of a price difference between two goods that are essentially the same." See Andreas Engert, 'Transnational Hedge Fund Regulation' (2010) 11 European Business Organization Law Review 329, 357. Regulatory arbitrage, broadly defined, refers to shifting activities from a heavily regulated financial sector to an unregulated or lightly regulated financial sector with the aim of maximizing profits by taking advantage of regulatory differentials. In essence, "regulatory arbitrage exploits the gap between the economic substance of a transaction and its legal or regulatory treatment." See Victor Fleischer, 'Regulatory Arbitrage' (2010) 89 Tex. L. Rev. 227, 229.

efficient regulations but also, if used opportunistically, may allow market participants to benefit financially while externalizing risks to society and undermining the overall quality of regulation.[29]

Finally, beyond the distinction between banking and capital market, hybrid areas exist. Areas such as derivatives, clearing and settlements, and market infrastructures are part of the capital market infrastructure, but include functional elements of banking. Several chapters of this book compare regulatory approaches in these hybrid areas along the lines sketched out above. This bird's eye view shows that financial markets need regulation. Moreover, there are many legal tools to regulate finance. However, whereas standard legal tools are employed to address comparable market failures, financial regulation is not easy to standardize. On the contrary, the chapters of this book will introduce and discuss the varying forces of convergence and divergence in financial regulation. For instance, we have mentioned the tradeoffs in addressing different market failures. Different jurisdictions may solve these tradeoffs differently. This introduction to financial markets and regulation frames the analysis of convergence and divergence in different areas of financial regulation.

Studying convergence and divergence is important because finance is cross-border and the allocation of capital transcends geographical borders. Therefore, the interplay between regulations of different jurisdictions affects the efficient allocation of capital. This has two implications. First, national law is relevant because financial transactions are based on private law, mainly property and contract law.[30] Second, depending on the different forms of intermediation and market failure, some areas require more regulatory coordination and convergence across different jurisdictions than others.

3. What drives convergence and divergence?

In this section, we propose four drivers of convergence and divergence in financial regulation. First, national private laws provide the legal basis for financial transactions; therefore, they are of primary relevance to financial regulators. Second, regulators may pursue different policy objectives or use different legal tools while pursuing the same objective. Third, financial regulators must account for the different structure and degree of integration of financial markets. Fourth, regulators are exposed to a set of other, heterogeneous, forces shaping their policymaking.

3.1 Private law underpinnings

The private law provisions relevant for finance are the rules concerning the allocation of resources among private parties, such as property and contract law (notably including bankruptcy).[31] These

[29] Charles AE Goodhart and Rosa M Lastra, 'Border Problems' (2010) 13 Journal of International Economic Law 705.
[30] Pistor (n 15) 317.
[31] The literature has identified five key aspects where private laws diverge in the field of finance: (1) the availability of insolvency set-off, (2) the availability and scope of security interest, (3) the availability of commercial trust, (4) the marketability of contracts, receivables and claims, (5) and the availability of tracing delinquent money on the insolvency of the final holder. Philip Wood, 'Law and Practice of International Finance, University Edition' 18–21.

are key aspects in people's everyday lives and touch upon their fundamental rights. Therefore, private law is entrenched in the national legal systems and resistant to convergence, despite the increasing globalization of finance. The analysis of divergent private laws in finance is beyond the scope of this chapter because we focus on regulation. However, existing private law arrangements are the baseline for regulating finance. Two examples illustrate this point.

First, consider the creation of a security interest which rests on (diverging) property law provisions. Different ways of creation and perfection of such interests would decrease the liquidity in financial markets by reducing the fungibility of the financial collateral. This inefficiency led to considerable harmonization at international level during the liberalization wave of the 1990s, eliminating all formal requirements for establishing security interests on financial collateral.[32] This example shows how divergent private laws converge to foster the efficiency of financial transactions.

Second, consider the different regimes of repurchase agreements (repos) in Europe and in the US. In Europe, repos operate through a true sale of the collateral. In contrast, in the US, transferring the title to collateral would be impractical under New York State law, so the collateral is pledged, realizing a fictitious sale.[33] These two arrangements are functionally equivalent but have different legal bases. Consequently, in regulating repo transactions, EU and US regulators must employ different legal tools.

3.2 Policy goals & regulatory tools

Beyond private law, a second driver of convergence or divergence depends on the regulatory preferences in pursuing social welfare.[34] In financial markets, this means addressing three key market failures.

1) Externalities: the allocation of funds to specific projects generates negative externalities that are borne by non-contracting parties and society. An example is the excessive subprime mortgage lending that generated the housing market bubbles leading to the GFC in 2007.

2) Information asymmetry: contracting parties have different information so that one party is unable to correctly price financial assets while the informed party can extract a rent from her informational advantage, resulting in fund misallocation. An example is insider trading.[35]

3) Imperfect competition: the price of financial services or the cost of credit is higher than socially efficient because of barriers to entry and other restrictions of competition. This results in misallocation of financial resources too. An example is the existence of systemically important

[32] Luc Thévenoz, 'Intermediated Securities, Legal Risk, and the International Harmonization of Commercial Law' (2007) 13 Stan. JL Bus. & Fin. 384.
[33] For a more detailed analysis, see Songjiwen Wu and Hossein Nabilou, 'Repo Markets across the Atlantic: Similar but Unalike' (2019) 30 European Business Law Review.
[34] Richard J Herring and Robert E Litan, *Financial Regulation in the Global Economy* (Brookings Institution 1995).
[35] Text to note 20.

banks with high market shares enjoining economies of scale and receiving an implicit government guarantee on their solvency because of they are too big to fail.[36]

Financial regulation should aim to correct such market failures and ensure efficient allocation of funds. In so doing, regulators pursue goals such as preserving financial stability, investor protection, enhancing market efficiency, and fostering competition.[37]

These goals sometime conflict with one another and the regulator must balance them. Consequently, regulation converges or diverges, in form and in substance, depending on how different regulators balance competing policy goals.

For example, the existence of some form of deposit insurance to protect financial stability is uncontested in modern banking regulation.[38] However, as we have seen, deposit insurance generates moral hazard, reducing market efficiency. Therefore, the design of deposit insurance varies across jurisdiction depending on how these competing goals are balanced out. Before the GFC, the UK regulator believed that deposit insurance should be capped so that depositors would have some skin in the game and retain incentives to monitor their bank. Therefore, deposits were insured only up to 90% of their value. Such deposit insurance was insufficient to stop bank runs and to protect financial stability. While regulators have learned their lesson, the way in which the UK balanced competing policy goals resulted in considerable regulatory divergence with tangible implications in terms of bank runs.[39]

3.3 Structure and integration of financial markets

The third factor explaining convergence and divergence of financial regulation relates to the differences in financial markets. Financial markets can vary along several dimensions, we briefly consider their structure and their degree of integration.

Financial systems are usually categorized as 'bank-based' or 'market-based'.[40] While this dichotomous distinction is oversimplistic and comprehensive analysis of the differences in global financial markets is beyond the scope of this chapter, few stylized examples help understand why differences in financial markets drive divergence of financial regulation.

For instance, the three largest economic and financial actors in the world, the US, the EU and China have radically different ways to promote fund allocation. In the US, the capital market is much more developed than anywhere else. Thus, it is much more common for companies to access the equity market or the debt market. On the other hand, the European financial system is

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[36] Franklin Allen and Douglas Gale, 'Competition and Financial Stability' [2004] Journal of money, credit and banking 453.
[37] Armour and others (n 6) 73.
[38] Diamond and Dybvig (n 12).
[39] Hyun Song Shin, 'Reflections on Northern Rock: The Bank Run That Heralded the Global Financial Crisis' (2009) 23 Journal of economic perspectives 101.
[40] See, for instance, Ross Levine, 'Bank-Based or Market-Based Financial Systems: Which Is Better?' (2002) 11 Journal of financial intermediation 398.

considered more 'bank-based': fund takers access capital mainly through the intermediation of credit institution. China represents yet another case, where both banking and capital markets have grown quickly in the past few decades under the close control and direction of the government.[41]

Financial systems do not only differ in their structure across jurisdictions or regions. Different parts of the financial system differ in their degree of integration. This also drives convergence and divergence of regulation. Some parts of the financial systems are inherently cross-border and have a global reach, such as the derivative markets. Others tend to be more national and less interconnected with other financial systems, such as the stock market or the market for insurance products. This creates momentum toward convergence and divergence of financial regulation. Regulatory divergence in highly internationally interconnected sectors implies considerable transactions costs for market operators. Therefore, industry initiatives in these areas, such as those pioneered by the International Capital Market Association (ICMA), the International Organization of Securities Commissions (IOSCO) and the International Swaps and Derivatives Association (ISDA) have pushed towards a considerable degree of harmonization through self-regulation[42] or lobbying.[43]

Moreover, market failures stemming from financial intermediation can have considerable extra-territorial and systemic reach. This represents another key driver for the global convergence of financial regulation. A clear example is the harmonization of bank capital regulation. During the liberalization of the banking industry in the 1980s, it became clear that banking activities (and crises) could have a global impact. In the absence of harmonization, a single jurisdiction would have limited incentive to account for the adverse effects of the banking activities in other countries (cross-border externalities). Therefore, the Basel Committee on Banking Supervision, established in 1974, became the global standard setter for the prudential regulation of banks with the so-called 'Basel Accords', whose first version was published in 1988.

3.4 Other shaping forces

The fourth driver relates to other, heterogeneous forces shaping financial regulation. We focus on regulatory competition, other political considerations, lobbying and technological innovation.

Divergence of financial regulation may not only depend on different regulatory preferences or financial systems. Divergence can also arise because of regulatory competition. Regulatory competition describes the actions of regulators in response to other regulators, to generate or

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[41] Franklin Allen, Jun "QJ" Qian and Xian Gu, 'An Overview of China's Financial System' (2017) 9 Annual Review of Financial Economics 191.

[42] Saule T Omarova, 'Rethinking the Future of Self-Regulation in the Financial Industry' (2010) 35 Brook. J. Int'l L. 665.

[43] For the lobbying of the financial industry to reach the harmonization bankruptcy safe-harbor for financial assets, see Philipp Paech, 'The Value of Financial Market Insolvency Safe Harbours' (2016) 36 Oxford Journal of Legal Studies 855, 868. On lobbying and financial regulation in general, see later text to note 50.

counter competitive pressure.[44] Having in place a competitive financial regulation framework is considered a key aspect for fostering economic growth.[45] Moreover, a competitive financial regulation can attract financial flows, increasing tax revenues and employment in financial services as well as the investment opportunities for domestic firms. The long-lasting debate about regulatory competition focuses on whether this competition gives rise to a 'race to the bottom' or a 'race to the top'. Race to the bottom means that engaging in regulatory competition would deteriorate the quality of regulation, offering more favorable treatment to financial firms, allowing domestic firms to expand, and attracting more foreign firms. Race to the top means that competition between financial regulators incentivizes innovation and experimentation, eventually resulting in more efficient regimes. A welfare analysis of regulatory competition in financial regulation is complex, if possible at all, and touches on politically sensitive matters beyond the scope of this chapter. Yet, the mere existence of regulatory competition partly explains convergence and divergence of financial regulation. Whether race to the top or to the bottom prevails is context-dependent and should be closely scrutinized in specific cases.

Regulatory competition is not the only politically-driven force shaping financial regulation. Wider political agenda can also influence the paths of convergence and divergence. For instance, in the aftermath of the World War II (WWII), the political project to facilitate the integration of western European countries, which resulted in the European Union (EU), required establishing an internal market based on the free movement of capital, among other features. This agenda is not directly related with the objective to attract financial flows. However, it has been influential in fostering convergence of financial regulation in Europe. So much so that, from a financial regulation perspective, the EU is often considered as a unitary jurisdiction, despite the continuing divergence of national laws.

An opposite trend of regulatory divergence can be observed in the case of Brexit.[46] The UK is currently in the final stages of approval of the Financial Services and Markets Bill, which is centered around the repeal of a large share of EU-based financial regulation.[47] This approach can be framed as regulatory competition, but, at least partly, reflects also the independent political wish to implement a "hard" Brexit.[48]

Another source of divergence currently driven by different political agendas is the integration of sustainability in financial regulation. The need for a quick transition toward more sustainable

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[44] Katrin Gödker and Lars Hornuf, 'Regulatory Competition', *Encyclopedia of Law and Economics, Volume 3 (OZ)* (Springer 2019).
[45] This is the basic intuition in Rafael La Porta and others, 'Law and Finance' (1998) 106 Journal of political economy 1113. Beyond such intuition, the legal origin approach to comparative law, especially in the field of finance, has been largely disproven. See Mathias M Siems, 'Legal Origins: Reconciling Law & (and) Finance and Comparative Law' (2007) 52 McGill LJ 55.s
[46] David Howarth and Lucia Quaglia, 'Brexit and the Battle for Financial Services' (2018) 25 Journal of European public policy 1118.
[47] The text and related documents are available at https://bills.parliament.uk/bills/3326 (last visited 25.05.2023).
[48] John Armour, 'Brexit and Financial Services' (2017) 33 Oxford Review of Economic Policy S54, S59.

practices is not, or at least should not be, a political issue. However, whether and to what extent to tweak financial regulation to facilitate such a transition remains a politically sensitive topic, with the EU leading the global discourse and the US lagging behind.[49]

So far, the analysis of convergent and divergent paths of financial regulation has rested on the assumption that regulators make independent choices in the public interest. However, there are also private interest theories of regulation.[50] Pressure from stakeholders, for instance lobbying, is also a driver of convergence or divergence of financial regulation. Lobbying is ubiquitous in the financial sector and can play an important role in conveying the preferences of the various stakeholders to the regulators. However, lobbyists only consider the private costs and benefits for their specific constituencies, overlooking social costs and benefits. Therefore, if one specific constituency is powerful enough to capture the regulator, the resulting policy will allow such constituency to extract a rent from the new policy but will not necessarily pursue the public interest.[51]

Lobbying activities can lead to convergence or divergence. For instance, the wave of financial deregulation of the 1990s and the early 2000s was the result of an intense lobbying activity by the financial industry.[52] Conversely, the industry can also lobby for fragmenting a harmonized regulatory landscape, earning a preferential treatment compared to foreign competitors.

In principle, the financial industry is not the only stakeholder that can influence the production of regulation. Especially in good times, the financial industry has more resources and expertise. In the aftermath of crises or scandals, however, other pressure groups – including the investors hit by the scandal or the crisis – can influence regulation.[53] Lobbying is not an independent driver of convergence or divergence. Rather, it amplifies or dampens other drivers, supporting the status quo or regulatory reform depending on the external circumstances.

Finally, technological innovation drives changes in financial regulation. The application of new technologies to finance is inherent to the history and development of financial systems. Yet, the recent pace of technological innovation in finance has been unprecedented because of significant developments in information technology, availability and computation of data, the rise of the blockchain technology, and the sudden increase of artificial intelligence. This recent wave of innovation is called ‘Fintech.’

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[49] John Armour, Luca Enriques and Thom Wetzer, ‘Mandatory Corporate Climate Disclosures: Now, but How?’ [2021] Colum. Bus. L. Rev. 1085, 1095.
[50] Johan den Hertog, ‘Economic Theories of Regulation’, *Encyclopedia of law and economics* (Edward Elgar Publishing Limited 2012).
[51] George J Stigler, ‘The Theory of Economic Regulation’ [1971] The Bell journal of economics and management science 3.
[52] See, for instance, Deniz Igan and Prachi Mishra, ‘Wall Street, Capitol Hill, and k Street: Political Influence and Financial Regulation’ (2014) 57 The Journal of Law and Economics 1063.
[53] Pepper D Culpepper and others, ‘Quiet Politics and Business Power’ [2011] Cambridge Books.

Financial innovation brings about new, more advanced forms of intermediation. New forms of intermediation create more room for divergence. Some regulators may act fast, enjoy the first mover advantage, and lead the debate. Other regulators may adopt a 'wait and see' approach, letting the innovation develop free of specific regulatory constraints. This allows jurisdictions to experiment with different legal tools and determine which one(s) better fit their system and their regulatory preferences. In facing novel financial transactions, the probability of making erroneous decisions is high and a harmonized solution is often unwarranted.[54]

A topical example in this regard is the regulation of the crypto economy. The regulatory spectrum is incredibly wide. It ranges from the ban on crypto activities in China to the recognition of Bitcoin as legal tender in El Salvador, passing through the new, encompassing European Market in Crypto Asset Regulation, the light and pro-competitive approach of the UK legislator in the Financial Service and Market Bill, and the enforcement-driven approach in the US.[55]

From a different perspective, financial innovation is related to regulatory arbitrage because the possibility to profit from arbitrage opportunities stimulate innovation.[56] The examples are countless and beyond the scope of this chapter. Suffice it to say that the shadow banking system has emerged from several opportunities for regulatory arbitrage.[57]

4. Paths of convergence and divergence: applications

In this section we apply the framework developed in the previous sections to the regulation of capital markets, banking and the sectors that fall in between capital markets and banking, such as financial market infrastructures (FMIs) including payment, securities custody and settlement systems, and central clearing counterparties and other hybrid sectors. The aim is to set the stage, in a stylized fashion, for the comparative analysis of these fields and subfields.

4.1 Capital markets

Capital markets are populated by heterogeneous intermediaries, such as stock markets, asset managers, and financial advisors. The function of these intermediaries is to generate information to support saving and investment decisions. This does not eliminate asymmetric information and market failure stemming from it.[58] Therefore, capital market regulation mainly deals with asymmetric information. Despite the unicity of the goal, significant divergence remains.

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[54] Roberta Romano, 'Against Financial Regulation Harmonization: A Comment' [2010] Yale Law & Economics Research Paper 17.
[55] Edoardo D Martino, 'Cryptocurrencies and Stablecoin Regulation: A Framework for a Functional Comparative Analysis', *Research Handbook in Comparative Financial Regulation* (Edward Elgar Publishing Forthcoming).
[56] Peter Tufano, 'Financial Innovation' (2003) 1 Handbook of the Economics of Finance 307, 318.
[57] Hossein Nabilou and Alessio M Pacces, 'The Law and Economics of Shadow Banking', *Research Handbook on Shadow Banking* (Edward Elgar Publishing 2018) 22.
[58] Armour and others (n 6) 216–218.

First, the private law underpinnings are important in capital markets because investor protection is still based on the regulation of contractual provisions and the liability of capital market intermediaries.[59] Although many of these protections have been moved to command-and-control regulation, the historic link with private law is a source of divergence, for instance in the context of doctrinal bases for bank liability.[60]

In terms of goals, jurisdictions may diverge if regulators have different views of the tradeoffs in fostering efficient allocation of capital. On the one hand, some jurisdictions may impose considerable regulatory burden on capital market players to adequately protect investors. On the other hand, other jurisdictions may focus on alleviating the regulatory burden on capital market players to incentivize more services to investors.

The different structure and degree of integration of financial markets also plays a role in divergence. The territorial reach of market failure is limited because capital markets do not necessarily have systemic implications. This weakens the case for harmonization. Moreover, regulatory competition is a powerful driver of divergence in capital markets. Designing more attractive regulatory regimes provides a competitive advantage to domestic fund takers (public companies, small and medium enterprises, etc.) and attracts financial flows.

Despite the incentive to engage in regulatory competition, wider political goals may push toward convergence. The most spectacular example of this convergence is the European Union: pursuing the goal of creating a political, economic and social union, the establishment of an internal (capital) market is quintessential. Therefore, the last decades witnessed an unprecedented level of harmonization in the EU capital markets law, so much so that – from a comparative perspective – the EU can almost be considered as a unitary jurisdiction.

The political agenda of different jurisdictions also converge after financial scandals. For example, the accounting scandals of the early 2000s involved many companies on both sides of the Atlantic. These scandals resulted in new rules on audit and disclosure in Europe as in the US.[61]

4.2 Banking

Differently from capital markets, banks allocate capital by attracting short-term funds repayable on demand and granting credit on their own account. This is known as Qualitative Asset

[59] For an application to crowdfunding and contractual protection of investors, see John Armour and Luca Enriques, 'The Promise and Perils of Crowdfunding: Between Corporate Finance and Consumer Contracts' (2018) 81 The Modern Law Review 51.
[60] Ross Cranston and others, *Principles of Banking Law* (3rd edn, Oxford University Press 2017) ch 10.
[61] For a comparative analysis, see Luca Enriques, 'Bad Apples, Bad Oranges: A Comment from Old Europe on Post-Enron Corporate Governance Reforms' (2003) 38 Wake Forest L. Rev. 911. For a critical take on these reforms, see Roberta Romano, 'The Sarbanes-Oxley Act and the Making of Quack Corporate Governance' (2004) 114 Yale LJ 1521.

Transformation.[62] The bank's business model is fragile, and the regulatory safety net makes it prone to excessive risk taking.[63]

From a comparative perspective, the key aspect to consider is that banking greatly contributes to systemic risk. Therefore, as we explained with regard to the Basel Accords, harmonization is needed to avoid cross-border externalities.[64] The harmonization of prudential requirements does not come without costs. First, globally harmonized requirements may increase the impact of regulatory arbitrage by (shadow) banks as they may induce similar strategies for regulatory arbitrage.[65] Second, harmonization amplifies the impact of regulatory mistakes.[66]

Despite considerable convergence, some divergence remains in the implementation of global standards for banking regulation, such as the Basel Accords.[67] Three aspects are worth mentioning. First, different jurisdictions diverge on the timing of implementation. The global standard setter usually provides a preferred timing; however, some jurisdiction may fully implement the new requirements before the deadlines while others can extend such deadlines, generating *de facto* divergence.

Second, some jurisdictions may decide to impose stricter requirements than the global standard. For instance, the leverage ratio requirement for US systemically important banks is that equity should be at least 5% of the assets, whereas the minimum equity requirement in the Basel Accord is 3%, which corresponds with the EU requirement.

Third, different jurisdictions may set different thresholds for the full application of the prudential requirements. The comparison between the US and the EU regime is still enlightening. In the US, full-fledged prudential requirements are imposed only on the eight largest, systemically important banks, with over $250 billions in assets. The regime for other 'smaller' banks is lighter and does not include the compliance with liquidity requirements or the annual supervisory review and evaluation. The European Union adopts a similar two-tier approach with the notable difference that the threshold below which the lighter regime applies is €30 billions in assets. This example illustrates a big regulatory divergence, which played an important role in the recent failure of regional, mid-sized US banks.[68]

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[62] Anjan V Thakor, 'Financial Intermediation and the Market for Credit' (1995) 9 Handbooks in Operations Research and Management Science 1073.
[63] Text to note 11. For a wider discussion of market failures in banking see Armour and others (n 6) ch 13.
[64] Text to note 38.
[65] Guillaume Plantin, 'Shadow Banking and Bank Capital Regulation' (2015) 28 The Review of Financial Studies 146.
[66] Romano (n 54) 17.
[67] Beyond prudential requirements, other considerable divergences persist in other aspects of banking regulation, such as bank governance and bank resolution. See, for instance, Jeffrey N Gordon and Wolf-Georg Ringe, 'Bank Resolution in the European Banking Union: A Transatlantic Perspective on What It Would Take' (2015) 115 Colum. L. Rev. 1297.
[68] Enrico Perotti, 'Learning from Silicon Valley Bank's Uninsured Deposit Run' (*VoxEU*, 5 May 2023) <https://cepr.org/voxeu/columns/learning-silicon-valley-banks-uninsured-deposit-run> accessed 29 May 2023.

4.3 Hybrid sectors

The distinction between banking and capital markets is useful for explanatory purposes but does not entirely capture the reality of modern finance, where several overlaps and grey area exists. Areas such as derivatives, clearing and settlements, market infrastructures and the shadow banking system are paramount examples. These sectors are quite heterogenous. An individual discussion of each of them falls beyond the scope of this chapter. However, they all share two functional characteristics. First, as already discussed, hybrid sectors display features of both capital markets and banking. Second, their territorial reach is large, often global, and as wide as the scope of their market failures.

From a comparative perspective, this means that the regulation of these sectors has mixed features of convergence and divergence, some typical of capital markets, others typical of banking. Moreover, the private law underpinnings are particularly relevant. For example, one significant friction in FMIs that has its roots in private law concerns the models of custody of securities**.** Despite the recent waves of harmonization in financial regulation, such differences persist and sometimes they have contributed to the inefficiency and fragmentation in financial markets.[69] For example, the model of how securities are held and transferred are significantly different in various jurisdictions. At least five different models for holding and transferring securities are identified; they include the trust model (England and Wales), 'securities entitlement' model (US & Canada), undivided property interest to the investors (France), pooled holding (Germany, Austria, and Japan), transparent approach (Nordic countries, Greece, Poland, Spain, China, and Brazil).[70] Such different approaches originating from the private law aspects of finance is a major source of friction in international finance and financial regulation. A single security depending on how and where it is custodied could be subject to various jurisdictions' law as well as their divergent models of holding and transferring securities.[71]

Coupled with the inherent cross-border reach of these markets, the result has been a considerable push toward private law harmonization coming from the industry, with the aim of reducing transaction costs. This has been achieved through lobbying, self-regulation or standardization of international commercial and financial practices, including a massive recourse to the choice of law clause in derivatives, repurchase agreements and securities lending contracts.[72]

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[69] Whether this is a source of inefficiency is debatable.

[70] Philipp Paech, 'Market Needs as Paradigm: Breaking up the Thinking on EU Securities Law' in Conac, Pierre-Henri, Segna, Ulrich and Thévenoz, Luc (eds), *Intermediated Securities: The Impact of the Geneva Securities Convention and the Future European Legislation,* (Cambridge University Press 2013).

[71] For example, in the European Union, the law of relevant intermediary approach (PRIMA) has been adopted to reduce the legal uncertainly about the law applicable to intermediates securities. *See* Art. 9, Directive 2002/47/EC of the European Parliament and of the Council of 6 June 2002 on financial collateral arrangements *OJ L 168*, and Art. 9(2) Directive 98/26/EC of the European Parliament and of the Council of 19 May 1998 on settlement finality in payment and securities settlement systems *OJ L 166,*

[72] These contracts, which play an important role in the well-functioning of financial markets are entered into under various master agreements such as ISDA Master Agreements, Global Master Repurchase Agreements (GMRAs) or

5. Conclusion

This chapter provides an analytical framework to study comparative financial regulation. Such a conceptual framework is predicated on understanding the main functions of finance, its instruments, and its participants. The main function of finance is to channel funds from fund givers to fund takers. However, market failures are ubiquitous regardless of whether financial intermediation is undertaken by banks or capital markets. Having studied the main market failures in banking and capital markets with a view to how these market failures are addressed by regulation, this chapter identifies and aims to conceptually categorize significant patterns of divergence in financial regulation despite similar market failures in banking, capital markets, and financial market infrastructures. The sources of such divergences are in the private law underpinnings of financial markets, diverging policy objectives and regulatory goals, and the varying structure of financial markets.

Despite such divergences, significant convergence and harmonization of financial regulation has occurred globally in the past decades. Two main drivers of such convergence have been the push by industry associations to reduce transaction costs, particularly in cross-border financial transactions such as derivatives, and the harmonization of financial regulation to address risk spillovers and prevent potential race-to-the-bottom from regulatory arbitrage. By investigating the drivers of convergence and divergence in financial regulation at the global level, this chapter sets out an analytical framework for the other chapters in this book, which will investigate several topics in financial regulation from a comparative perspective.

Global Master Securities Lending Agreements (GMSLAs) drafted by the relevant industry associations. All these master agreements provide for choice of law clauses. The most popular jurisdictions are New York and England.

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