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National and International Financial Market Regulation and Supervision Systems: Challenges and Solutions

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Abstract: The purpose of this original study is to critically analyse the emergence and development of the national models of financial regulation, international standards and codes, and regional and national financial regulation and supervision (for the cases of the UK, USA, Sweden, the EU, and Finland). The research raises both academic and regulatory concerns. The relevance and purpose of this research arise from a need for an academic analysis of the economic nature and classification of financial market regulation systems. They represent a theoretical justification for changes in the policies and supervisory practices of national and international regulatory authorities in response to innovations in financial technologies and instruments, digital products, and risks. Secondly, it will stimulate more systematic work on regulatory databases, registration, and reporting procedures in various economies in different financial markets. The author identifies five main systems of national financial regulatory markets: the multi-tiered, multi-agency US system, the twin peaks model (UK), and the mega-regulatory model (Sweden). There is a thorough review of the international standards and institutions that work for the stability of financial systems. The analysis of the regional and national systems of financial regulation and supervision is based on the examples of the EU and Finnish institutions. National macro- and micro-economic regulation and supervision have been examined, with a focus on the US Federal Reserve and the US Treasury. An important result of the study is the systematisation of the directions of the development of national and international regulatory institutions (since the 1980s). First, the minimum capital and credit risk requirements for banks (the 1980s) were complemented in the 21st century by buffer reserves, liquidity, and leverage standards. Second, regulation focuses on ensuring the sustainability of the national economy. The regulatory focus is on ensuring the sustainability of national and global financial systems. Third, there is an increase in the number of supervised institutions. Fourth, there is a division of the functions between central banks (macro-economic regulation) and one or two mega-regulators (micro-economic regulation and supervision). Fifth, there is a division of labour between the international financial institutions (BIS, IMF, and WB) and national regulators. Sixth, the focus is on protecting consumers and investors and countering money laundering and the financing of terrorism. Seventh, there is an understanding based on a common approach by central banks to new financial technologies and cybersecurity.

Keywords: financial markets; national regulatory models; principles and methods of supervision

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1. Introduction

The regulation and supervision of financial markets primarily serve as a form of public administration as a means of streamlining the system and ensuring its stability in the internal and external financial and economic environment. Each country has historically developed its own system of financial regulation and supervision.

Regulation consists of generally binding the requirements and procedures set for management objects (money, capital, currency, insurance, and gold markets) and various economic legal entities (banks, financial companies, and infrastructure institutions) to foster the sustainable development of the national, regional, and global economy, as well as equality among economic actors and the principles of fair competition.

Regulation, which falls into macro-economic (monetary) and micro-economic regulation, entails certain targets, principles, norms, and standards.

Regulatory institutions apply legal (laws, regulations, standards) and economic (indicative) tools for influence. Regulation, which is based on general macro-economic goals, establishes specific targets for financial markets to achieve the stability of the financial system, the stability of the banking system and national currency, inflation targeting, the transparency of transactions and financial reporting, protection, hedging against systemic risks, the protection of consumers and investors, and the creation of an efficient and reliable securities market. Micro-economic regulation involves the registration, supervision, and control of market participants.

Regulation and supervision are basic, closely interlinked forms of a single financial regulatory system. They have emerged as a result of the failures of the capitalist market (imbalances, crises, and poor competition) and have evolved with it. The state first regulated the banking sector, then the insurance market, followed by the foreign exchange market and the stock market.

The relevance of this research comes from the need for an academic analysis of the economic nature and classification of financial market regulation systems. They represent a theoretical justification for changes in the policies and supervisory practices of national and international regulatory authorities in response to innovations in financial technologies and instruments, digital products, and risks.

The purpose of the present study is a critical analysis of the emergence and development of national models of financial regulation, international standards and codes, and regional and national financial regulation and supervision (using the example of the UK, USA, Sweden, the EU, and Finland). The research aimed to analyse the changes in the supervisory practices of national and international regulatory authorities in response to new financial technologies, digital products, financial instruments, and the risks of exacerbating contradictions in the global economy. The study offers a classification of regulatory systems and a substantiation of the policy directions of regulatory institutions.

The research focuses on structuring and classifying the world map of the systems/models of financial regulation and supervision. In detail, we considered the systems of macro-economic regulation and micro-economic supervision in the USA ("Conservative, sectoral, two-tier" model), England (the "Two Peaks" model), Sweden (the "Mega-regulatory" model), and the regional-national system of financial regulation and supervision (the cases of the EU and Finland).

2. National Models of Financial Regulation

There are seven systems of regulation of the financial markets in the world economy. They were the result of the development of models of national capitalism and state regulations over the economy. The world economic crises of 1929–1933, 2008–2009, World War II, the global financial and economic environment and system, and information technologies have all created serious changes to the models, goals, principles, and institutions for the regulation and supervision of financial market participants. The modern systems (models) of financial regulation in the countries of the world are presented in Table 1.

In Asian countries, the Central Bank acts as the main regulator of financial markets (53% of countries in the region). This can be explained by the different levels of development of financial markets. Fourteen countries (31%) have only one universal mega-regulator: in India, the Securities and Exchange Board of India (SEBI 2022); in China, the China Securities Regulatory Commission (CSRC 2021); in Turkey, the Capital Markets Board of Turkey (CMB 2021); in the Republic of Korea, the Financial Services Commission of Korea (FSC 2021).

Table 1. The financial regulators of the countries of the World, 2020.

Macro Region	Specialized Regulators			1 + CB *	CB *	Other		
	Mega Regulator	2 Regulators "The Twin Peaks"	3 and More Regulators "Trident"			2 + CB *	No Regulator	Region Banks, Foreign CB
Asia	13	2	3	5	24	1		
Africa	1				45			9
Europe	20	1		10	7			
Oceania	1	1	1		3		6	
North America	1		1					
South America	1			3	8			
Total	37	4	5	18	87	1	6	9

Source: (Financial Regulator 2020). * CB—Central bank.

In five countries (11%), the markets are regulated by a central bank and a special supervising body. In Israel, the Israel Securities Authority (ISA 2022) and the Bank of Israel (BOI 2022) issue the shekel, regulate the banking sector, and manage the country's gold reserve.

Japan and Hong Kong have two different regulators (the Twin Peaks). In Japan, the Financial Services Authority of Japan (FSA 2022) is the state regulator, while the Japan Securities Dealers Association (JSDA 2022) is a non-governmental dealers' association. In Hong Kong, the Securities and Futures Commission (SFC 2022) and the Finance Commission (FinCom 2022) act as regulators of forex brokers and financial companies.

The UAE has three regulators (Trident): The Dubai Financial Regulation and Supervision Authority, which is the financial regulator of the DIFC Special Economic Zone in Dubai (The Dubai Financial Services Authority (Dubai FSA 2022)); the UAE Securities and Commodities Authority (SCA 2022); The Central Bank of the United Arab Emirates (2022), which is the national currency issuer and banking sector financial regulator.

In Africa, only South Africa has a single specialised regulatory and supervisory agency—the Financial Sector Conduct Authority (FSCA 2022). The remaining 45 countries retained supervisory functions for the Central Banks, while in six dependent territories, supervision is conducted by the Bank of France, the Bank of Spain, the Bank of Portugal, and the ECB. In a number of countries, the regulatory functions are performed by regional central banks: The Bank of Central African States and the Central Bank of West African States.

Europe has 20 mega-regulators. In nine countries, there is a central bank and a regulator; in eight countries, there is only a central bank. The mega regulators have been largely at work in the EU member states. England has two regulators. The "central bank + special regulator" model can be found in Hungary, Italy, Slovakia, and Ireland. The central bank performs general supervisory functions in the Vatican, Serbia, Slovakia, the Czech Republic, and Montenegro.

The countries of Oceania present a rather patchwork image. There is one mega-regulator in the region (Vanuatu), and "two peaks" in Australia: the Australian Securities and Investments Commission (ASIC 2022), which is a financial regulator of banks, insurance companies, building societies, and pension funds, and the Australian Prudential Regulation Authority (APRA 2022), which is a state financial regulator of banks, insurance companies, building societies, and pension funds. A central bank supervises the Solomon Islands, Tonga and Fiji, while in six countries, there is no regulator or central bank (Marshall Islands, Micronesia). New Zealand, however, has three regulators (Trident model): the Financial Markets Authority of New Zealand (FMA NZ 2022), which is a state agency that issues licenses for brokers, and the Financial Service Providers Register (FSPR 2022), which registers and licenses financial services. As a government agency, it keeps a registry of companies. Brokerage services are registered with an FMA NZ license; Financial

Services Complaints Ltd. (FSCL 2022) is a non-profit organisation for resolving disputes between brokers and investors.

North America. Canada has one mega-regulator, the Investment Industry Regulatory Organization of Canada (IIROC 2022), which is a non-profit self-regulatory organisation (SRO).

Historically, the USA has the most extensive two-level system of regulating financial markets, formed by seven federal regulators: the Securities and Exchange Commission (SEC 2022); the Commodity Futures Trading Commission (CFTC 2022); the Federal Reserve System (FED 2022)—the central bank of the USA; the Federal Deposit Insurance Corporation (FDIC 2022)—the federal insurance agency; the US Treasury (U.S. Department of the Treasury 2022); the Consumer Financial Protection Bureau (CFPB 2010); and the Financial Stability Oversight Council (FSOC 2010)—a division of the US Treasury.

Furthermore, there are three self-regulatory organisations (SROs): the National Futures Organisation (NFA 2022), which regulates the futures market; the National Credit Union Administration (NCUA 2022); the Federal Credit Union Regulatory, Supervisory Agency; and the Financial Industry Regulator (FINRA 2022). The national financial regulatory system spreads further, up to the national level, and is represented by four institutions: The State Banking Regulator; the State Securities Regulator (analogous to the SEC in the national market); the State Insurance Regulator with a mandate to supervise and regulate all insurance business in the state, and the State Attorney General.

In South America, there is one mega-regulator in Brazil, the Brazilian Securities and Exchange Commission (CVM 2022). Argentina, Chile and Colombia employ the "Central Bank + 1 regulator" model. In eight countries, it is the central bank that has universal regulatory functions.

Thus, the picture of the financial regulatory systems in the world economy looks as follows: about 50% of countries vest the supervising functions exclusively in the Central Bank; over 22% of countries (developed economies), after the world crisis of 2008–2009, employ the system of one multifunctional mega-regulator; more than 10% of countries use the CB+1-regulator model, and 1% of countries employ the model of two regulators and more than three special regulators.

"There are 87 developing economies which focused on the Central Bank as a monoregulator. Banks of this peer group are the main financial institutions. The methodology of regulation and supervision over them has been worked out on the basis of the Basel standards, constant reporting to the Central Bank adequately shows capital adequacy, soundness, liquidity, quality of the loan portfolio, and risks. The main financial risks of these economies are concentrated in credit institutions. The market positions of other financial intermediaries are insignificant, they are at the stage of formation and intensive development".

In developed economies, there are 37 mega-regulators and four "Twin Peaks", which is due, on the one hand, to the historically developed systems of banking regulation and supervision, and on the other hand, it is due to the large role, placing, and risks of the non-banking intermediaries of the financial economy: stock exchanges, brokers, insurance companies, pension funds, mortgage, clearing, and payment institutions. The research is given absence and the specific features of these financial models is given in the course of a detailed analysis of macro-economic regulation and micro-economic supervision systems in USA, England, the EU, Sweden, and Finland.

The following is a review of the main national models of financial market regulation systems. There are four models of financial regulation: 1. The conservative, sectoral model (the USA). 2. The "twin-peaks" model (Australia, England, and Japan). 3. The mega-regulator model (with Sweden as an example). 4. The regional-national model (the EU and Finland as examples).

2.1. The Conservative, Sectoral, Two-Tier Model

In the most obvious form, the model is found in the US (see Table 2) and goes back to the fundamental principles of capitalist economic development in the 18th century. It is based on the concept of cautious government intervention in the market, the conservatism of the 19th century, and the 1930s legislative acts in the 20th century.

The founding fathers of the American constitution and financial system, Alexander Hamilton, the first US Secretary of the Treasury, and Thomas Jefferson (1790–1791), introduced the idea of a strong federal government supported by a national finance infrastructure, a national bank, and industrial enterprises. This concept was concretised in five financial and commercial areas within the national economy: taxation, public credit, financial markets and organisations, financial stability, and trade policy.

The 19th century saw the establishment of the State Banking Regulator (1851), the Office of the Comptroller of the Currency (1863) and the National Association of Insurance Commissioners (1871). The Federal Reserve System (1913) was established in the early 20th century. The Federal Deposit Insurance Corporation (1933), the Securities and Exchange Commission (1934), and state insurance regulators (1945) were created after the Great Depression (1929–1933). The emergence of the derivatives market led to the formation of the Commodity Futures Trading Commission (1974). Financial Stability Oversight Council, Consumer Financial Protection Bureau, and Financial Industry Regulator were created in the aftermath of the global crisis (2007–2009).

The creation and evolution of the US financial regulatory system were determined by the development of financial markets, their scale, the emergence of new financial products, monopolies, financial holdings, and crises (disrupting business, jobs, income, investment, and savings). This has resulted in a complex regulatory infrastructure targeting different financial services markets (banking, capital markets, insurance, and their segments), involving both the federal centre and individual states. This system comprises government agencies and SROs. Such a complex, multi-tiered model of financial regulation has emerged as a response to a large economy with a very developed financial market (see Table 2).

In the US model, regulation and supervision assume the specialisation of financial institutions (banks, insurance companies, and securities companies) and a divide between markets for financial assets (money, capital, insurance, currency, gold, and their financial instruments: credit/deposit contracts, shares, bonds, and derivatives). They include federal and state supervisory institutions. The legislative focus of the system is to protect the investors and consumers of financial services. The regulatory and supervisory system is the most complex, multi-tiered, multi-agency in the world. Its scale and the large number of responsibility centres make it less efficient, thus necessitating reforms after financial system failures and crises (after the Great Depression—the Glass-Steagall Banking Act 1933), with the establishment of the Federal Insurance Corporation's contributions (1934). The Dodd-Frank Act of 2010 and OTS were a response to the global crisis of 2008–2009. The Office of Thrift Supervision (OTS), which operated as a treasury agency from 1989–2011, was the primary regulator of federal savings and loan associations (Thrift) related to pursuing the 'American dream' of homeownership. Following the 2008–2009 crisis, when many large OTS-run mortgage companies went bankrupt (American International Group (AIG) and Washington Mutual IndyMac), the USA implemented the largest reform since the Great Depression. The Dodd-Frank Wall Street Reform and Consumer Protection Act, passed on 21 July 2010 to reduce risks in the US financial system, transferred the functions of the OTS to five institutions as the new financial regulators: the Financial Stability Oversight Council (FSOC), the Office of the Comptroller of the Currency (OCC), the Federal Deposit Insurance Corporation (FDIC), the Federal Reserve Administration, and the Consumer Financial Protection Bureau (CFPB). On 21 July 2011, the OTS was terminated. The mortgage lending market and the construction industry stand at the centre of the national economy. It is supported by mortgage banks, savings, and loan associations, and the strength of companies in the construction, steel, road, electrical, automotive, and electronics industries depends on its scale and growth. By creating a "pool" of five supervisors, legislators responded to the collapse of the US mortgage market, which triggered the US financial system crisis and the global crisis of 2008–2009.

Table 2. Financial services (assets), markets, and regulators in the USA, 2020.

Financial Services Markets	Regulators
Banking	***Federal Reserve System, FED***—The central bank was established on 23 December 1913 with the mandate of centralized control over the US banking system, ensuring price stability and economic growth. Website: https://www.federalreserve.gov/ (accessed on 25 May 2023).
	***The Office of the Comptroller of the Currency, OCC, 1863*—US Department of Treasury** (1789), with the task of regulating and supervising all the banks of the country; federal national associations; Fifty branches and agencies of foreign banks, according to the Charter. Website: https://www.occ.gov/ (accessed on 15 November 2022).
	The Federal Deposit Insurance Corporation, FDIC. Website: https://www.fdic.gov/ (accessed on 25 May 2023). It was created in 1933 in the wake of bank defaults to protect individual savings after the closure/bankruptcy of banks. Since 2011, the corporation has provided deposit insurance of up to USD 250,000 for all accounts in one bank.
	National Credit Union Administration, NCUA. Established in 1970; it carries out state supervision of federal and state credit unions. At the same time, it insures the savings of individuals. Website: https://www.ncua.gov/ (accessed on 15 November 2022).
	The State Banking Regulator. Established in 1851. In each state, it is engaged in licensing and approving the charters of national banks, foreign agencies, savings institutions, and trust companies. The oldest in the country is the *New York State Banking Department*.
Stock market and Investment banks	***Stock Exchange Commission, SEC.*** It was established in 1934 by the Government Agency for Regulation and Supervision of the Securities Market. Website: https://www.sec.gov/ (accessed on 25 May 2023).
	State Attorney General
	State Security Regulator—an analogue of the SEC within the state market.
	Financial Industry regulatory authority, FINRA. It was created in 2007 to protect investors. Authorized by Congress, the SRO monitors firms doing business in the United States with securities and monitors compliance with the rules of trading on the OTC market, including 624,000 brokers, 175,000 branches, and more than 650,000 representative offices. Website: https://www.finra.org/#/ (accessed on 25 May 2023).
Commodity/Futures	***Commodity Futures Trading Commission, CFTC***. The independent agency was established by Congress in 1974 to regulate the market of commodities and financial futures and options. Website: https://www.cftc.gov/ (accessed on 25 November 2022).
Insurance	***State Insurance Regulators*** have a mandate to oversee and regulate the entire insurance business in the state. The principles of insurance regulation were fixed in 1945 by the McCarran-Ferguson Act, which determined that the regulation of insurance in the United States does not fall within the competence of federal authorities but within the competence of each state separately. For example, the Insurance Department Consumer Services of Arkansas. Website: https://insurance.arkansas.gov/ (accessed on 25 November 2022).
	***National Association of Insurance Commissioners* (NAIC),** 1871, SRO—develops rules and regulatory requirements, many of which are approved by the states. Website: https://content.naic.org/ (accessed on 25 November 2022).
All financial markets	**Consumer Financial Protection Bureau (*CFPB*), 2010.** Websites: https://www.consumerfinance.gov/ (accessed on 25 May 2023); https://www.consumerfinance.gov/language/ru// (accessed on 25 May 2023). The Government Bureau monitors banks, credit unions, and other financial companies to ensure compliance with financial laws that protect against unfair treatment, fraud, and abuse.
	Financial Stability Oversight Council (FSOC). The division of UST (FSOC 2010). Website: https://home.treasury.gov/policy-issues/financial-markets-financial-institutions-and-fiscal-service/fsoc/ (accessed on 25 May 2023). The board is responsible for identifying risks to US financial stability, encouraging market discipline, and responding to emerging risks to the stability of the financial system.

Based on the data available on the websites of the regulatory authorities.

2.2. The Twin Peaks Model

The twin peaks model is well represented by Australia, England, and Japan, all of which are economies with advanced financial markets. The twin peaks model was a response to the global crisis. The former supervisory institutions were unable to prevent the "financial tsunami waves" coming from the US markets. The institutions had to be reformed. The central bank retained the main macro-economic functions of issuing money, inflation targeting, and conducting monetary and exchange policies while leaving the regulation and supervision of financial market participants to special supervisory institutions (committees, commissions, and agencies).

The model is best illustrated by England (see Table 3). Conservative England, which has focused on liberal principles regarding the functioning and regulation of the economy since the 17th century, implemented two reforms in 1986. Margaret Thatcher's government (the Big Bang reforms) ended the monopoly of the old brokerage houses and opened up the financial market to foreign investors and investment banks and free competition. A new regulatory structure focused on the stability of the financial system as a whole was established by 2012. It set out a hierarchy of goals: controlling the banks, protecting consumers, reducing risks from the probability of the outflow of banks, and minimising systemic risks.

The Bank of England kept its functions as a bank supervisor, ensuring compliance with the new Basel III capital adequacy, asset liquidity, and risk management requirements, as well as deposit insurance. Its supervisory powers have been expanded to include the infrastructural institutions of the financial system: payment systems for clearing settlements in the money (BACS (Bankers' Automated Clearing Services), CHAPS (The Clearing House Automated Payment System), APACS (Association for Payment Clearing Services), and Moneybookers), capital and foreign exchange markets, and the central securities depository.

The place and role of England in the global economy, as the world's centre for the euro currency and transactions, impose high requirements for the credibility of the national financial system and set out the target functions for regulators and supervisors of financial markets. The Financial Policy Committee (FPC), the new reform regulator as of 2012, has focused on reducing systemic risk and combating money laundering. For England, the reliability of banks and the financial system is a strategic factor in attracting foreign capital. The Financial Conduct Authority (FCA), an independent regulator, seeks to maintain healthy competition, ensure the enforcement of laws, and protect investors' rights. In the global financial markets, transactions (including Lloyd's insurance), arbitration, and litigation are conducted largely under English law. Since 1968, the Panel on Takeovers and Mergers has been responsible for enforcing the City Code on Takeovers and Mergers and safeguarding shareholder protection. Its status as a currency haven and its attractiveness for business incorporation makes the supervision of institutions particularly prudential.

2.3. The "Mega-Regulator" Model

The model is mainly found in advanced economies (Austria, Belgium, Canada, Denmark, Estonia, Finland, France, Germany, Greece, Poland, Latvia, Liechtenstein, Luxembourg, Malta, Monaco, Netherlands, Portugal, India, Slovenia, Singapore, Spain, Sweden, Switzerland, and Norway). All financial markets are regulated by one regulator. The mega-regulator approach has proved reliable in medium and small economies with well-developed financial markets: Canada, Austria, Norway, Denmark, Sweden, Finland, Czech Republic, and Singapore. More than 30% of the countries in the world use it.

Countries resort to a system of mega-regulators for a number of reasons. (1) The transformation of banks into "financial supermarkets", multi-purpose institutions, and financial holdings in the money, debt, capital, forex, mortgage and insurance markets. (2) The emergence of TNBs, with assets and entities in various financial markets across the world. (3) The rapid increase in the range of financial instruments within a single financial institution—from classical deposits/loans to derivatives, e-money, and digital products. (4) Development of financial technologies—remote account management, securities transactions, and contracts.

Table 3. Twin Peaks model (the case of England), based on the financial regulatory reform in the UK in 2012 (UK Financial Services Act 2012).

Regulatory Goals	Forms of Regulation	Regulatory Institutions	Objects of Regulation
Financial system Stability: -Bank control and monitoring -Consumer protection -Reducing risks from the potential outflow of banks -Minimization of systemic risks	***Banking conduct regulation*** Tightening of capital adequacy and reliability requirements	**Bank of England**	*Prudential supervision of system infrastructure institutions:* • recognized payment systems; • central securities depositories; • central counterparties (CCPs).
	Deposit insurance in case of default, loss of liquidity and bank flight	**Prudential Regulation Authority (PRA),** subsidiary of the Bank of England	*Prudential supervision of institutions accepting deposits:* • banks, credit unions; • building societies (cooperatives); • insurance; • some investment firms.
	Countering money laundering and attempts to conceal a transaction under the guise of a financial fund and shell companies (Financial firewalls)	**The Financial Policy Committee (FPC).** Independent authority. Functions: recommendations to PRA and financial institutions to limit systemic risk.	*Recommendations on reserve capital* in order to implement countercyclical policy (Countercyclical capital buffer, CCB). Capital requirements in certain sectors (sector capital requirements, SCR). Financial leverage control.
		Financial Conduct Authority (FCA). Independent agency. Functions: protecting investors and maintaining healthy competition, countering transactions by persons with insider information, investigating and monitoring the enforcement of laws aimed at protecting and regulating the financial system.	Trust companies, hedge funds, brokers, independent financial advisors, financial companies that are not subject to PRA regulation.
		The Committee on Takeovers and Mergers (the Panel on Takeovers and Mergers). An independent body, 1968. Functions: monitoring compliance with the "City Code" on takeovers and mergers, guaranteeing protection of shareholders in transactions related to the takeover of companies.	All companies involved in M&A transactions.

Compiled by websites: (Bank of England 2023; FCA 2022; The Panel on Takeovers and Mergers 2022; FPC 2022; APRA 2022).

These new phenomena have enabled structurally complex transactions between institutions from different markets (including foreign markets), with the use of different financial instruments and financial technologies. This resulted in the diversification of risks due to a large number of transaction participants, financial markets, and instruments. The stability of national financial systems no longer depended solely on the reliability of an individual national bank and banking system but also on all participants of the financial market, their interaction with foreign ones, and the presence of foreign investors. The model with one mega-regulator is illustrated by Sweden (Table 4).

Table 4. The Swedish financial regulation system.

<table>
<tr><th colspan="4">Swedish Ministry of Finance</th></tr>
<tr><th colspan="4">Finansinspektionen (FI)
Swedish Financial Supervisory Authority (FSA Sweden), 1991</th></tr>
<tr><td rowspan="12">Goals</td><td rowspan="4">Consumer protection</td><td colspan="2">Financial literacy of the population.
Education. Various educational programs with Pension and Consumer agencies. Youth programs</td></tr>
<tr><td colspan="2">Increasing the share of private investors</td></tr>
<tr><td colspan="2">Verification of counterparty firms through the Register of Companies</td></tr>
<tr><td colspan="2">Warning from ESMA (European Association of Securities and Markets)</td></tr>
<tr><td colspan="3">Areas</td></tr>
<tr><td rowspan="3">Financial stability</td><td colspan="2">Transfer of savings to financing (investment) S—I</td></tr>
<tr><td colspan="2">Risk Management</td></tr>
<tr><td colspan="2">Reliability of payments</td></tr>
<tr><td>Banking supervision</td><td colspan="2">Capital buffer requirements</td></tr>
<tr><td>Insurance</td><td>Institute of Risk Management, Firm Stability, and Asset Protection</td><td>Objectives: prevention of problems, finding a reasonable balance between risks and payments, and consumer protection</td></tr>
<tr><td>Markets</td><td>FI is the administrator of the Benchmark regulation (BMR) in the ESMA registry.</td><td>Securities markets and infrastructure (trading platforms and transactional systems)—a key element of the financial system is regulated through licensing, the analysis of reports, and BMR.</td></tr>
<tr><td colspan="3"></td></tr>
<tr><td>Functions</td><td>Report on the financial stability of the financial system, firms, and markets in terms of risks</td><td>The report is prepared two times a year with an analysis of the risk system and recommendations for their reduction</td><td></td></tr>
<tr><td rowspan="3">Regulatory objects, areas of responsibility</td><td>Banks</td><td></td><td></td></tr>
<tr><td>Insurance Co</td><td>FI supervision objects: life insurance companies (approx. 300), mutual insurance companies (approx. 55), pension funds (75), and insurance intermediaries (1000)</td><td></td></tr>
<tr><td>Securities, derivatives, Forex markets</td><td>brokers, market makers, jobbers, dealers of large traders, and clearing and payment companies.</td><td>Represent the interests of investors, exchange traded funds, (ETFs), issuers of shares, bonds, promissory notes, derivatives, and other financial instruments;
listed securities on a major international stock exchange with headquarters in Stockholm OMX Nasdaq Nordic Exchange</td></tr>
</table>

Table 4. *Cont.*

Swedish Ministry of Finance			
Finansinspektionen (FI) Swedish Financial Supervisory Authority (FSA Sweden), 1991			
Forms of regulation and supervision	Supervision	Assessment of the financial condition of companies and the entire market. Risk assessment and management systems	
	Regulation	Determination of countercyclical capital buffer for banks	
	Issuing permits	Permission to banks, insurance companies, and firms for payment services with a turnover of EUR/per year 3 million, brokers, traders, stock exchanges, service providers APA, ARM, and CTP.	Permits for financial services under the "Law on Permits" (2015:1016, Chapter 1, section 1). Last updated: 2020-11-17 C_M. Permits administered by Swedish Financial Supervisory Authority. Website: https://www.verksamt.se/web/international/services/find-permits?p_p_id=tvv_hitta_tillstand_WAR_tvv_hitta_tillstand&p_p_lifecycle=0&p_p_state=normal&p_p_mode=view&p_p_col_id=column-1&p_p_col_count=2&_tvv_hitta_tillstand_WAR_tvv_hitta_tillstand_orgLangId=50326&_tvv_hitta_tillstand_WAR_tvv_hitta_tillstand_parentNav=%2FshowAuthorities.xhtml&_tvv_hitta_tillstand_WAR_tvv_hitta_tillstand__facesViewIdRender=%2FshowOrganization.xhtml (accessed on 25 May 2023).

Sources: (Finansinspektionen—Sweden's Financial Supervisory Authority 2020).

3. International Organisations, Standards, and Legislation as Drivers for Strengthening Financial Systems

The global economy, when exposed to global crises, is in dire need of stability in national and international financial systems and financial markets. These markets are deeply integrated and interdependent and require uniform standards, codes of conduct, best practice institutions, and recommendations for national regulation and supervision (see Table 5).

In an effort to co-ordinate international and national institutions, the BIS hosted the Financial Stability Forum (FSF 2020) in 1990 and the Financial Stability Board (FSB) in 2009. The international institutions have updated the international standards following best practices to make national financial systems less susceptible to crises and imbalances. However, priorities for the implementation of standards can only be set according to the specific circumstances of the country in question. Therefore, since 1999, the IMF and the World Bank Group, within the framework of the joint Financial Sector Assessment Programme (FSAP), have conducted an initial assessment of the financial sector and existing regulatory practices by addressing financial market vulnerabilities and identifying any potential for development. During the second phase, the Central Bank and Ministries of Finance have tailored the international recommendations to their own national environment. Their macro-economic and micro-economic performance has become the key to motivating the adoption of international standards. It is no panacea but is a means of moving towards the creation of a sound and stable national financial system as a segment of the global system.

Table 5. International standards and institutions with regard to the stability of financial systems.

Area	Key Standard	Who Released	References
Transparency of Macro-economic policy and Information			
Transparency of monetary and financial policy	Code of Good Practices on Transparency in Monetary and Financial Policies	IMF	www.imf.org (accessed on 25 May 2023). https://www.imf.org/en/Publications/CR/Issues/2016/12/31/Spain-Financial-Sector-Assessment-Program-Detailed-Assessment-of-the-IMF-Code-of-Good-19347 (accessed on 25 May 2023).
Transparency of fiscal policy	Code of Good Practices on Fiscal Transparency	IMF	https://www.imf.org/external/np/fad/trans/code.htm (accessed on 25 May 2023).
Dissemination of information	Special Data Dissemination Standard (SDDS)/General Data Dissemination System (GDDS)	IMF	www.imf.org (accessed on 25 May 2023).
Institutional and Market Infrastructure			
Insolvency	Principles and guidelines for effective systems of insolvency risk management and Protection of Creditors' Rights.	World bank	https://www.worldbank.org/ (accessed on 25 May 2023).
Corporate Governance	Principles of Corporate Governance	OECD	www.oecd.org (accessed on 25 May 2023). https://www.oecd.org/daf/ca/Corporate-Governance-Principles-ENG.pdf (accessed on 25 May 2023).
Bookkeeping	International Accounting Standards (IAS)	International Accounting Standards Committee (IASC)	https://www.iasplus.com/en/resources/ifrsf/history/resource25 (accessed on 25 May 2023).
Audit	Standards on Auditing (ISA)	International Federation of Accountants (IFAC)	www.ifac.org (accessed on 25 May 2023).
Payments and settlements	Core Principles for Systemically Important Payment Systems	Committee on Payment and Settlement Systems (CPSS)	https://www.bis.org/ (accessed on 25 May 2023). https://www.bis.org/cpmi/info_pfmi.htm?m=3%7C16%7C598 (accessed on 25 May 2023).
Market integrity	The Forty Recommendations of the Financial Action Task Force on Money Laundering	Financial Action Task Force (FATF)	https://www.fatf-gafi.org/home/ (accessed on 25 May 2023).
Financial Regulation and Supervision			
Banking Supervision	Core Principles for Effective Banking Supervision	Basel Committee on Banking Supervision (BSBC)	https://www.bis.org/bcbs/index.htm?m=3%7C14%7C625 (accessed on 25 May 2023).
Security markets Regulation	Objectives and Principles of Securities Regulation	International Organization of Securities Commissions (IOSCO)	https://www.iosco.org/ (accessed on 25 May 2023).
Supervision of insurance activities	Insurance Core Principles	International Association of Insurance Supervisors (IAIS)	https://www.iaisweb.org/home (accessed on 25 May 2023).

Sources: (Langdon 2001).

In 2011, the EU established the European System of Financial Supervision (ESFS), subordinated to the European Parliament, the Council of the EU, and the European Commission. These bodies have been given the mandate to develop common binding regulations for all EU countries (the Single Rulebook). Macro-economic regulation is carried out by the ECB, established in 1998, and the European Systemic Risk Board (ESRB Recommendations 2022). The European System of Financial Supervision (ESFS) covers macroprudential and microprudential supervision.

Macroprudential supervision includes the supervision of the EU financial system as a whole. It is carried out by the European Systemic Risk Board (ESRB) with the primary objective of preventing or mitigating risks to the EU financial system. The main tasks of the ESRB are: collecting and analysing information to identify systemic risks; issuing warnings where systemic risks are deemed significant; making recommendations to the ECB and national regulators regarding responses to identified risks; monitoring the follow-up to warnings and recommendations, and co-operating and co-ordinating with international forums.

Microprudential supervision is the supervision of individual institutions such as banks, insurance companies, or pension funds. It is carried out by the European Supervisory Authorities (ESAs) (EBA 2022; ESMA 2022; EIOPA 2022): the European Banking Authority (EBA), the European Securities and Markets Authority (ESMA), the European Supervisory Authority for Insurance and Occupational Pensions, and the European Insurance and Occupational Pensions Authority (EIOPA). The ESAs work toward the harmonisation of financial supervision in the EU by developing a common set of rules—a set of prudential standards for individual financial institutions. The supervisory institutions of the ESA help ensure that the rulebook is applied consistently to create a level playing field. They have the authority to assess risks and vulnerabilities in the financial sector, developing macroprudential policy measures (Measures of National Macroprudential Policy 2023). The ECB works closely with supranational and national regulators as part of a single European supervisory framework.

The supervisory objects include monetary, capital, and insurance market entities: credit institutions; payment institutions; financial conglomerates; investment companies and funds; trust companies; brokerage and other firms providing investment services; financial market infrastructure organisations (exchanges, central depositories, and central counterparties; rating agencies (RAs); insurance and reinsurance organisations; insurance intermediaries; professional pension institutions.

Their main functions are developing technical standards and guidelines for the implementation of Basel III; the direct supervision of RAs and trade repositories; developing technical standards and guidelines for securities transactions; introducing prudential supervision requirements for insurance organisations; improving legislation on the regulation and supervision of financial markets; creating a common culture and practice of financial supervision in the EU.

The Eurozone Banking Union (19 countries) employs a single supervisory mechanism (SSM) (see Table 6), comprising the ECB and the Central Bank. The ECB supervises all Eurozone banks (4700) and directly supervises 28 systemically important banks (E-SIBs), including 13 globally significant G-SIBs that meet Basel III requirements for capital adequacy (with a capital/asset range of 5–7.5%) and asset quality.

Thus, the Eurozone employs a *subregional-national system* for the regulation and supervision of financial markets. National regulators delegate to EU supervisory authorities the functions of harmonising technical standards and requirements for market participants and supervisory institutions. The ECB has a prominent role as a national regulator. A two-tiered supervisory system EU level (ECB, EBA, ESMA, EIOPA) and national regulators (central bank and mega regulators) jointly supervise financial markets for their reliability, sustainability, efficiency, and minimisation of systemic risks.

Table 6. Single supervisory mechanism—ECB banking supervision.

	ECB	National CBs/Regulators
Objects of general supervision	Credit organizations. Financial holding companies, mixed financial holding companies. Branches of credit institutions registered in EU countries that are not participating in SSM, operating in the Eurozone.	"Significant" national banks (not under ECB supervision, but with current supervisory functions).
Objects of direct supervision	Global and Europe-SIBs that meet one of these criteria: - assets of more than EUR 30 billion; - assets that make up more than 20% of the country's GDP but not less than EUR 5 billion; - are of significant importance for the country's economy (upon notification of the national regulator and after the ECB's decision); - those who have requested direct financial support from the European Financial Stability Facility or the European Stability Mechanism.	"Less significant" banks; credit organizations of foreign countries operating through a branch or directly.
Supervision functions	• Licensing and revocation of licenses of all credit institutions in the Eurozone; • Evaluation of participation shares acquired and sold by banks; • Ensuring compliance with prudential standards, management system requirements, internal control, reserve standards, etc.; • Setting higher requirements to ensure financial stability; • Stress testing as a tool of prudential supervision; • Consolidated supervision of financial conglomerates; • Interaction with national regulators within the framework of macroprudential regulation, setting higher requirements for capital buffers than national ones; • Early response measures in cooperation with national bankruptcy regulators. In relation to less significant banks—general supervision; • Issue of recommendations, regulations, and general instructions for national regulators; • Interaction with local regulators on consumer protection.	➢ Preparation of proposals for the ECB and their implementation; ➢ Implementation of the majority of supervisory measures for "significant banks" (monitoring of compliance with legislation at the establishment of a bank, regular assessments of the state of banks and on-site inspections); ➢ Assessment of internal banking risk models; ➢ Ongoing checks of banks. **Functions not transferred to the ECB:** ○ regulator in the field of consumer protection of financial services; ○ receiving notifications about the activities of banks in other EU countries; ○ supervision of banks of foreign countries; ○ supervision of payment systems and services; ○ prevention of legalization of illegal income, money laundering, corruption, and financing of terrorism.

Sources: (EBA 2022).

4. Regulation of Financial Markets

The regulation of financial markets extends to macro-economic and micro-economic regulation. Its fundamental principles, methods, and instruments were formed after the Great Depression of 1929–1933. These principles have been implemented by the main US government monetary institutions: The Federal Reserve and the Treasury.

4.1. Macro-Economic and Monetary Regulation (Case Study of the USA)

The monetary policy of the Fed was defined by the Banking Act (1935). It boils down to two objectives: to ensure maximum employment (without hindering economic growth) and to maintain price stability (including blocking inflationary expectations). The Fed determines monetary policy and pursues a specific set of objectives centred on the regulation of the money supply and economic lending. By adjusting the money supply (MS), the Fed influences the price of money, interest rates, and the performance of the US economy. Lowering borrowing costs boosts the borrowing market for businesses and households, leading to increased investment and purchasing power (S-I, according to Keynes), which stimulates the production of goods and services and the growth of the economy as a whole.

The Fed uses three main macro-economic tactics and tools to conduct monetary policy: *(1) Open market operations. (2) Regulation of discount rates. (3) Regulation of reserve requirements*. These have a good scientific rationale and are well understood by the markets.

The payment of interest income by the Central Bank on compulsory reserves and surpluses held in bank accounts in excess of regulatory requirements has introduced some innovations in addition to the classic three monetary instruments of the Fed. The Fed found itself in a competitive environment. Among the innovations are

- *Term Auction Facility* (TAF), where banks have the opportunity to borrow money from the Fed on full collateral terms (Fed also takes mortgage-backed low-rated securities as collateral);
- *Primary Dealer Credit Facility* (PDCF)—overnight loans with qualified collateral;
- *Term Securities Lending Facility* (TSLF). According to this procedure, the banks' primary dealers can receive loans for a period in the form of Treasury securities secured by other securities;
- *The Asset-Backed Commercial Paper Money Market Mutual Fund Liquidity Facility* (ABCP) repurchase program provides loans to banks to repurchase high-quality asset-backed commercial securities from mutual funds. The program is designed to help mutual funds that face a shortage of funds due to the desire of investors to withdraw their deposits;
- *Commercial Paper Funding Facility* (CPFF)—issuers of such securities (both secured and unsecured) through authorized primary dealers. Designed to improve the liquidity situation of commercial enterprises;
- *The Money Market Investor Financing Facility* (MMIFF) is designed to buy back certain types of assets from qualified investors who have difficulties with liquid funds;
- *Term Asset-Backed Securities Lending Facility* (TALF). According to the program, the Fed provides, without the right of turnover, up to USD 1 trillion to holders of securities created in the order of securitization of loans to students, households, small businesses, etc. The evaluation of such securities when issuing loans is carried out at market value.

While conducting monetary policy, the FOMC primarily monitors banking sector liquidity, money demand (MD) and money supply (MS), and economic cycles and their forecasting, making active use of the FED funds rate indicative method. The FOMC's algorithm is determined by the regularity of action: overproduction and overstocking in key sectors of the economy necessitate a slowdown in growth, which means reducing bank liquidity by raising the interest rate on bank lending and increasing the yield on government debt. The offering price for securities is a function already performed by the Treasury in shifting banks from the real sector to T-bills of US government debt). In order to stimulate growth and replenish bank liquidity, the FOMC gradually lowers the key rate. The FED funds rate serves as a benchmark for the money market, as does the LIBOR (except that in the former case, it is set by the Central Bank; in the latter, it is set by 20 top-rated private banks with a AAA credit rating).

Rate trends reflect not the equilibrium real interest rate of the MD=MS but rather the dynamics of the fundamental economic factors, including the unemployment rate, prices, productivity, and economic growth (including the blue chips). The algorithm is simple: an increase in GDP leads to a cautious rate-cut policy, and a decrease in GDP leads to an increase in the rate. Since 1980, the rate has followed the phases of crises and growth (booms): between 1980 and 1982, the Fed lowered the rate from 18% to 8% (and the Treasury lowered the corporate income tax from 52.8% to 32.58%). Between 1990 and 2000, during the decade of a balanced money market, sustained growth, and low unemployment, the rate fluctuated within 5%. The global crisis of 2008–2009 increased unemployment to 10%, leading to a financial and economic collapse (negative real GDP). Quantitative easing (QE) was part of the monetary policy programme until 2017: The Fed cut the US Treasury rate from 5% and kept it below 1%.

In the course of the post-crisis recovery, economic growth, and low unemployment (2018–2019), the rates ranged between 2.25 and 2.50%. The COVID-19 crisis brought the Fed back to QE, forcing a rate cut to the zero lower bound (0.00–0.25%) in March 2020. Having achieved overall economic activity (including employment growth) in the second quarter of 2022 (15 June 2022), the FOMC raised its key rate by 75 basis points to 1.5–1.75% for the first time since 1994 (Federal Reserve Issues FOMC Statement 2022). The Fed's analysis was apparently accurate: the most important stock indicators reacted positively, with the DJIA increasing by 0.96%, the S&P by 1.39%, and the NASDAQ by 2.21%.

The Fed funds rate remains a price benchmark for the commercial and government bond markets and commercial bank lending rates. There is a track record of joint action in monetary policy between the Fed and the Treasury. The correlation coefficient is high—for 10-year US T-bills, it is 0.97, and 0.91 for the two-year version. Inflation targeting at 2% and the active use of the "federal funds rate" constitute the tactical and strategic tools of the Fed's monetary policy.

4.2. The Basel Regulatory Framework: US Implementation of the Basel Accords

The USA is a member of the Basel Committee on Banking Supervision (BCBS). The Fed has therefore developed guidelines for the supervised banks on the core documents of the Basel Committee (Basel I, II, and III), Basel Co-ordination Committee bulletins, best practices for capital adequacy implementation, and risk and liquidity management. In July 2013, the Federal Reserve Board adapted the Basel III requirements for bank capital in the USA, increasing both the quantity and quality of capital for US banking organisations. In October 2013, the Federal Reserve Board offered guidelines for the implementation of the liquidity coverage ratio in the USA, which, for the first time, created standardised minimum liquidity requirements for large and international bank institutions and systemically important non-banking financial companies. These institutions would have to hold a minimum amount of high-quality liquid assets, such as Central Bank reserves and government and corporate bonds, that could be easily converted into cash.

The Volcker rule prohibits banking institutions from conducting real estate transactions or investing in or sponsoring hedge funds or private equity funds. The rules have been developed by five federal financial regulatory agencies, which include *the Federal Reserve, the Commodity Futures Trading Commission, the Federal Deposit Insurance Corporation, the Office of the Comptroller of the Currency and the Securities and Exchange Commission*.

Since the American financial market supervision practices by the Fed and Treasury have already been thoroughly examined, it is the European experience that draws the most attention.

5. Subregional-National System of Financial Regulation and Supervision (the Case Study of the EU and Finland)

In Finland, macroprudential and microprudential supervision has been carried out since 2009 by the Finnish Financial Supervisory Authority (Finanssivalvonta, FIN-FSA), a special mega-regulator and supervisor of the financial sector of the economy. Finland, as a member of the EU, exercises its regulatory and supervisory functions in co-operation with the institutions of the European Financial Supervisory System (see Table 7).

Table 7. Finnish Financial Regulation Model, 2020.

Parliament of Finland				**European Parliament**			
				European Council for Regulation (2013)			
				European System of Financial Supervision (ESFS), 2011			
"The Law on the Financial Supervisory Authority" FIN-FSA (No. 878 Act on the Financial Supervisory Authority Amendments up to 19.12.2014/1198 included Adopted in Helsinki on 19 December 2008) * **Parliamentary Commission on Financial Regulation** **Act on the Bank of Finland (214/1998)**				**European Central Bank (ECB)**	**European Banking Authority (EBA),**	**European Insurance and Occupational Pensions Authority (EIOPA)**	**European Securities and Markets Authority (ESMA), 2011**
Government	**Bank of Finland**						
Ministry of Finance	• Risk Management and Financial Accounting Department; • Department of Banking Operations.	**FIN-FSA** ** Finnish Financial Supervisory Authority and ESFS member		**Bank of Finland FIN-FSA**		**FIN-FSA**	
		Financial market participants Forms of regulation	**Financial market participants Forms of regulation**	Directives			
All market participants	Banks	• Banks; • Companies that are not engaged in life insurance, life insurance and reinsurance; • Employees' pension insurance companies; • Pension funds; • Pension funds and employee sickness funds, as well as other employee benefit funds; • Insurance associations; • Unemployment funds; • Pension institution of local Self-government, Central Church Fund; • Investment companies; • Financial asset managers of the company; • Finnish Central Securities Depository (APK); • Stock Exchange; • Payment institutions.	1. Authorization, registration, approval of the rules of activity of market participants and their monitoring; 2. Control over the issuance and trading of financial instruments and compliance with the regulations and rules governing clearing and custodial services; 3. Supervision of compliance with international financial reporting standards; 4. Prevention and detection of money laundering and terrorist financing; 5. Management and control over the activities of the Savings Bank Inspection; monitoring and analysis of the availability and pricing of basic banking services; 6. Monitoring and evaluation of the development of financial markets and operational activities of companies; 7. Collection and publication of comparable data on the financial position of financial market participants.	1. CRD III (Tier II Capital 15%); 2. SRB; 3. Stress tests covering credit, % and operational risks in the Coef DC; 4. MiFID; 5. Mandatory bank reserves for deposits (2%);		SD	Registration and supervision of RA and TR

Sources: * (European Central Bank 2022) Act on the Financial Supervisory Authority: https://www.finanssivalvonta.fi/globalassets/en/fin-fsa/fin-fsa_act.pdf (accessed on 25 May 2023). ** (Act on the Financial Supervisory Authority 2018); Finnish Financial Supervisory Authority (FIN-FSA 2022): https://www.finanssivalvonta.fi/en (accessed on 25 May 2023). Where: SD—Solvency II Directive 2009—Directive on the reliability of Financial Institutions, insurance and reinsurance of companies' activities (Solvency II Directive): https://www.eiopa.europa.eu/rulebook-categories/directive-1382009ec-solvency-ii-directive_en (accessed on 25 November 2022). CRD—Capital requirement Directive. MiFID—Market in Financial Instruments Directive. ESRB—European Systemic Risk Board. SRB—Systemic Risk Buffer. RA—Rating Agencies. TRs—Trade repository, TRs under Regulation EU No 648/2012. According to the ECB classification—"The central register of official copies of transactions concluded on the OTC derivatives market".

Supervision covers banks, insurance and pension companies, and investment firms and funds, as well as the Helsinki Stock Exchange. Up to 95% of FIN-FSA's activities are funded by supervised entities, with the Bank of Finland ensuring the remainder. FIN-FSA operates in co-operation with the Finnish Parliament (Financial Regulatory Commission), the Bank of Finland, and the European Financial Supervisory Authority (ESFS), but takes independent decisions in its supervisory activities.

The goals and functions of FIN-FSA have been stipulated in the Financial Supervisory Authority Act (No. 878 Financial Supervisory Authority Act, as amended before 19.12.2014/1198, enacted in Helsinki on 19 December 2008), which include four main goals: ensuring the smooth operation of credit institutions, insurance and pension companies, and other supervised entities in financial markets; protecting the rights of insured persons and building public confidence in financial market transactions; promoting best practices in financial markets and raising public awareness of financial markets.

FIN-FSA has developed target groups of guidelines and regulations to be followed in its supervisory activities: 1. Commencement of activities. 2. Organisation of supervised entities' operations. 3. Risk management. 4. Accounting, financial statements and management reports. 5. Capital adequacy. 6. Code of conduct. 7. Operations of securities markets. 8. Insurance operations. All activities of FIN-FSA-supervised entities are, however, considered from the perspective of consumer protection and financial market balance.

Regulation and supervision are the core activities of FIN-FSA. The regulation includes issuing regulations and guidelines, preparing legislation on the financial market, and advising on legislative initiatives in the Finnish Parliament and the European Parliament ("European Regulatory Council" (No1024/2013).

The code of conduct of the FIN-FSA-binding regulations and guidelines for businesses is a regulatory tool. It is based on the Finnish and EU legislation and recommendations of the EU supervisory institutions: the European Banking Authority (EBA), the European Insurance and Occupational Pensions Authority (EIOPA), and the European Securities and Markets Authority (ESMA). FIN-FSA also benefits from the advice of the Bank for International Settlements (BIS), the IMF, and the World Bank (WB). It issues advisory statements on specific issues whenever appropriate.

The main form of regulation of the financial markets is the granting of business permits, registrations, notifications, and the approval of rules for market participants and their monitoring (permits, registrations, and notifications). These are tailored to each financial market segment (see Table 8).

Thus, the FIN-FSA provides market access in accordance with the regulations. Failure to comply with these regulations would result in the loss of business permits and the exit of the companies from the market. By means of the continuous supervision of the activities of market participants, the market is regulated. Therefore, the supervisory instruments serve, at the same time, as market regulation instruments in the hands of one supervisory body: 1. The supervision of the issuance and trading of financial instruments and compliance with regulations and rules governing clearing and custodial services. 2. The monitoring of compliance with international financial reporting standards. 3. The prevention and detection of money laundering and terrorism financing. 4. The management and supervision of the Savings Bank Inspectorate; monitoring and analysis of the availability and pricing of basic banking services. 5. Monitoring and evaluating the development of financial markets and company operations. 6. The collection and publication of compatible data on the financial position of financial market participants. In fact, FIN-FSA's regulatory and supervisory functions overlap.

Table 8. Sectoral registration and reporting forms FIN-FSA, 2020.

Markets	Market Participants	Registration Procedures and Forms	Reporting Procedures and Forms
Banking market	EBA reporting frameworks	Authorisation and registration	Table of reporting scope (Credit Market)
	Payment service providers	Authorisations, registrations and notifications	
	Mortgage credit intermediaries	Authorisations, registrations and notifications	
Insurance market	Employee pension insurance Life		Reporting:
	non-life insurance		Reporting:
	Unemployment funds		Reporting
Capital market			Table of reporting scope
	Investment service providers	Application for authorisation Authorisations, registrations and notifications	Reporting
	Fund management companies	Authorisations, registrations and notifications	Reporting
	Investment service providers	Authorisation, registrations and notifications	Reporting
	Crowdfunding intermediaries	Authorisation, registrations and notifications	Reporting
	Issuers and investors	Notification of major holdings	• Public disclosure and the delay of disclosure of inside information; • Disclosure obligation • Reporting obligation concerning the prevention and detection of market abuse; • Short positions; • Managers transactions.
EU regulatory requirements	Regulation (EU) No 648/2012 of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories (Regulatory framework)	European Market Infrastructure Regulation (EMIR) The Market in Financial Instruments Directive (2007) * MiFID II/MiFIR	
EU reporting requirements	Alternative Investment Fund Management Directive, 2011 (AIFMD) **: Regulatory reporting Reports and notifications	Notifications	AIFMD-reporting Reporting of financial standing and risks
FIN-FSA requirements for registration and reporting of financial sector innovations FinTech–Financial sector innovations	Virtual currency providers	Innovation Help Desk advises on license issues	

Where * "The EU Directive on Markets in Financial Instruments" (MIFID) 2007 regulates reporting on stocks and derivatives. MIFID II 2018—reporting standards for Forex brokerage companies. ** "EU Directive on Alternative Investment Funds" (AIFMD) on the reporting of hedge funds, private equity funds, and real estate investment funds.

5.1. FIN-FSA Register of Financial Market Participants

The FIN-FSA register includes lists of financial market prospectuses; supervised entities; notices/warnings; shared savings account providers; warnings and unauthorised service providers, and insurance intermediary registers.

Warning and rogue provider lists are important regulatory tools for the FIN-FSA. In order to protect the interests of clients and investors, financial market operators should comply with financial regulations. The FIN-FSA publishes the following lists for this purpose: "Warnings concerning unauthorised service providers", "Warnings concerning prospectus and offering requirements", "Prohibitions concerning insurance brokerage", and "Warnings from foreign supervisory authorities".

The integration of financial markets and the expansion of online services offered more choices to customers, but at the same time, customers are exposed to more risk. Despite supervision and regulation, dishonesty in financial markets is likely to affect honest private investors and depositors.

FIN-FSA is issuing warnings in the following cases:

1. A service provider contacts you by phone from outside the EU. A typical form of criminal activity is when the service provider, the investee (e.g., shares), and the address to make the payment are in different countries;

2. The service provider is overly hasty: "The decision must be taken immediately; otherwise, the offer becomes null and void";

3. Payment is required in advance;

4. Payment is made to an organisation that is different to the service provider and may be addressed to a third country;

5. There is no written contract or other written documentation;

6. Maximum profit is promised in a short period of time and without risk;

7. The offer is made individually and must be kept confidential.

The FIN-FSA recommends the following verification procedures before making a decision:

- Does the service provider actually exist? (The internet has enabled the use of fictitious names and the creation of fake identities and company websites. Even well-known service providers and branded products have been used for some other purposes). The authenticity and reliability of the service provider can be verified through contact details, local authorities, and governments;
- Who runs the company? What is the company's ownership structure and history?
- Is a permit required? Does the service provider have a permit?

The authorisation or registration of the service provider can be checked against the lists of supervised entities and FIN-FSA notifications.

Example of registration procedures for a payment service provider.

Payment service providers and electronic money institutions submit an application, complete authorisation forms, and pay cross-border service fees. The activities of the applicant shall comply with the Payment Institutions Act (29/2010, in Finnish), which requires authorisation and compliance with the term "payment service", e.g., making a payment transaction, issuing payment instruments, and transferring funds. In order to obtain authorisation, the applicant completes a compliance and due diligence form with the FIN-FSA, whereas the information service, if authorised, issue an invoice. Participants in certain market segments shall complete special registration forms (see hyperlinks in Table 8).

5.2. *The Financial Supervision Authority (FSA)*

The first supervisory tool is a company report prepared in compliance with the requirements (forms) of the FIN-FSA. Supervised entities in all financial markets shall regularly submit various financial and market information to the FIN-FSA, which shall be used to monitor the economic performance of companies, including their profitability, capital adequacy, systemic risks, and business volumes. The reporting frequency is determined by FIN-FSA guidelines (see Table 9).

Table 9. Forms and frequency of reports required by the FIN-FSA.

The Regularity of Reporting and Releases	Report Form
Monthly	Liquidity report. (Liquidity coverage ratio, LCR)
Quarterly	Income statement, expenses, balance sheet
	Net stable financing report (net stable funding ratio, NSFR)
	Asset encumbrance reporting
	The credit institution's report on risks: interest rate risk, loans to maturity, large borrowers.
	On capital adequacy
	About international agreements
Twice a year	About payment services of Finnish providers in the domestic market and branches of foreign companies in Finland
Annually	Report on funding plans
	Releases on supervision of credit institutions on capital adequacy in accordance with the CRD Act, article 78

Sources: (Commission Implementing Regulation (EU) No 680/2014 of 16 April 2014 (2014)).

The reporting of financial position and risks shall be conducted in a standardised and regular form (Jakelu FIN-FSA 2022). The supervision of financial markets is sector-specific: banking sector—banking supervision; insurance market—insurance supervision; capital market—supervision of issuers, intermediaries, infrastructure institutions, and market investors. However, there are general supervisory requirements for all financial market participants to respect licenses (permits), reporting, ethics, and consumer protection standards.

Banking supervision is at the core of financial supervision. The FIN-FSA, in co-operation with the European Central Bank (ECB), is responsible for the prudential supervision of credit institutions. The FIN-FSA oversees bank credibility, risk management practices, the risk tolerance of credit institutions, the process applications for authorisation and registration, participates in the development of banking legislation, and monitors the compliance of banks and payment service providers with established practices and consumer protection rules. See the consumer protection website (FIN-FSA 2018a, 2018b, 2018c, 2022).

Supervision and monitoring reports are published on a regular basis (several times a month) in statements and risk assessments in various segments of the financial market. For example, in July and August 2020, the following were published: "Summary of the Industry Risk Assessment of Money Laundering with respect to Payment Service Providers", "Updated EVA recommendations on statutory and non-statutory loan repayment moratoria applied in light of the COVID-19 crisis, included in the FIN-FSA Rulebook and Recommendations", "FIN-FSA decision to extend the profit-sharing recommendation until 1 January 2021 and clarification of expectations related to capital buffers and liquidity" (FIN-FSA 2020a, 2020b, 2021a, 2021b).

Insurance supervision. The FIN-FSA is responsible for the overall prudential supervision of the insurance sector. The purpose of supervision is to ensure that organisations have the financial means to meet their obligations, in particular, the payment of premiums and pensions. The FIN-FSA is designed to monitor the compliance of insurance companies with established practices and consumer protection rules (see the consumer protection website above).

The FIN-FSA monitors companies for life, property, liability, financial and specific risks, and pension institutions; the solvency and financial situation of insurance companies; internal risk management and risk management procedures; underwriting risks, in particular, the calculation and adequacy of technical reserves; investment risks: employment funds; finance and solvency; governance; codes of conduct in dealing with customers and their implementation practices.

Insurance supervision includes monitoring the accuracy of the financial statements of the supervised entities in the insurance sector in accordance with the regulations and guidelines issued specifically for the insurance sector. Additionally, the insurance supervisor is responsible for cross-border co-operation with EIOPA and the College of Supervisory Authorities.

Capital market. The purpose of FIN-FSA's supervision of the markets and business conduct is to enhance confidence in the markets and in the activities of market service providers. The FIN-FSA exercises control over investments in securities and other investment products, including the disclosure and financial reporting obligations of listed companies under IFRS. The mega-regulator monitors trading on securities markets and their reports and investigates cases of securities market abuse.

Moreover, the FIN-FSA exercises control over the codes of conduct in the financial sector and the activities of investment service providers, management companies, and the managers of alternative investment funds (see consumer protection website above). The FIN-FSA also reviews applications for permits and registrations in its area of responsibility and participates in the development of supervisory regulations, as approved by law and in international supervisory co-operation.

Finland and the EU conduct joint activities on topical financial market issues: Prevention of Money Laundering and Terrorist Financing, Financial Technology (FinTech), and Sustainable Finance.

6. Conclusions

Financial markets have been regulated throughout the 400-year history of capitalism. It began in the 17th and 18th centuries with mandates issued by royal courts to the Central Bank, giving it the exclusive right to issue money, oversee money circulation, and supervise second-tier banks. With the development of financial markets and the emergence of new instruments in the 20th century, central banks, national regulators (ministries of finance), and special market-oriented institutions acquired new regulatory functions. Eventually, each country developed national systems of regulating and supervising financial markets. Being somewhat resistant to innovation, they are affected by the global economic crises (1929–1933, 2008–2009, COVID crisis 2020–2021) and new phenomena and financial instruments in the world economy (globalisation, derivatives, financial technology, e-money, and digital products).

The Great Depression of 1929–1933 urged the creation of a regulatory and supervisory system for securities market participants and protection (insurance) for stockholders. The emergence of a global financial and economic environment in the 1980s and a system in which the national economy and its markets became a segment of the global, world economy, shaped a new agenda for regulatory institutions. In an open economy, the flow of foreign capital into national markets and the withdrawal of interest and non-interest income became relatively free and liberal. The movement of capital on a global scale was determined by the profitability and liquidity of assets and market conditions. Central banks remained the last outposts to protect the stability of national currencies before the influx of foreign direct and portfolio investment. The central banks of major economies were the initiators of Basel I, II, and III, harmonising the methodology for assessing capital, capital adequacy, and risks. For over 30 years (since 1988), the Basel standards have formed the basis of the supervisory functions of the world's central banks over the banking industry.

Financial regulatory systems have evolved again since the global crisis of 2008–2009. Therefore, the theoretical and practical relevance of the study was aimed at clarifying the essence of new phenomena and risks to financial markets, the classification of regulatory systems, and the justification of policy directions of regulatory institutions. National central banks and traditional mono-regulators of financial markets failed to prevent a recession as it spread from the markets of other countries. Neither could the US regulatory system prevent financial collapse. The post-crisis reforms of regulatory and supervisory systems have created a new architecture. Central banks all over the world continue to perform macro-economic (monetary) regulatory functions, implementing monetary and credit policy. Central banks retain micro-economic supervisory functions in about 50 per cent of countries. These are mainly developing economies with limited financial market turnover and fairly simple financial instruments. The US remained committed to a sectoral system of financial regulation, with two peaks and a large number of supervising institutions. The rest of the world has built up systems with one mega-regulator (developed economies) and two/three regulators.

The logic behind the reforms stems from the new quality and scale of financial asset markets (money, debt and equity, currency, insurance, and gold). These markets derive their revenues independently from the real asset markets, drawing on the national and foreign segments of global finance. The emergence of derivative financial instruments (a turnover of more than 800% of annual global GDP), the multi-vector diversification of bank assets across economic sectors, and the emergence of financial holdings and specialised financial companies have led to complex transactions using instruments from different financial markets. Credit and promissory note transactions use securities and guarantees. Transactions in underlying assets (from the world of commodities, securities, currencies, interest rates, indices, contracts, terms, etc.) are conducted using derivatives. Participants in financial transactions (banks, brokers, funds, etc.), infrastructure institutions (exchanges, payment systems, and clearing houses), investors, depositors, and customers are exposed to the risks of different markets, the interest rate fall/rise of the money or capital market, the devaluation of the national currency or reserve, and the operational risks of any market participant.

The depth and scope of this study have a number of limitations. Identifying basic patterns that are common and specific in national regulatory systems requires a much larger sample of countries. There is no audited database of regulators, and their credibility reduces the validity of the comparative analysis. The research was conducted in accordance with moral, ethical, and legal considerations, and it is difficult to take into account the interdependence of national and international law. Future research might address such issues as exploring the relationship between the sustainability of global and national economies, the competition between TNCs and national companies, and the balance between inflows and outflows of direct/portfolio investments.

The modern economics of global and national finance has made markets more complex as regards instruments and transaction patterns. National and international regulatory institutions have therefore developed in a number of different directions: (1) The requirements for minimum bank capital and credit risk (the 1980s) have been extended to include buffer reserves, liquidity, and leverage standards in the 21st century, with the central and relevant focus nowadays being the forecasting, assessment, and protection of balance and off-balance sheet liabilities against systemic risks. (2) The regulatory focus is on ensuring the stability of the national and global financial system as a driver of sustainable economic growth. (3) The expansion of the list of supervised institutions. (4) The division of functions between central banks (macro-economic regulation) and one or two mega-regulators (micro-economic regulation and supervision). (5) The division of functions between international financial institutions (BIS, IMF, WB …) and national regulators in supervising financial market participants while introducing unification of regulatory and supervisory requirements for financial markets (EU, USMCA, MERCOSUR, ASEAN, APEC, and BRICS). (6) The protection of consumers and investors and combating money laundering and terrorist financing, and (7) the standardisation of the overall approach of global central banks to new financial technologies and cybersecurity.

The national systems of macro-prudential regulation and micro-prudential supervision of financial markets reflect the specific characteristics of each country and global practice and work in synergy with international and regional institutions. These are reflected in the register system of market participants, forms, and the procedures of supervision. There is no single regulatory and supervisory system. The systems change and will continue to change in response to the new challenges and risks of the global financial market, with the national market being an integral and organic part of it.

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