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Institutional Dependence and Systemic Risk in Modern Money Markets

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Abstract
The money market represents a key segment of the financial system, ensuring short-term capital allocation, liquidity, and the transmission mechanism of monetary policy. Although it is traditionally perceived as an example of the "free market," empirical evidence and current trends demonstrate that regulatory frameworks, institutional safeguards, and trust in state and banking institutions condition its stability. This article analyzes the main money market instruments: Treasury bills, commercial paper, repurchase agreements, banker's acceptances, and Eurodollars, and highlights their dependence on regulation and the solvency of issuers. Particular attention is devoted to systemic risk, moral hazard, and the concentration of power ("too big to fail"), which challenge the sustainability of the self-regulating market ideal in a globalized economy. In addition to global analysis, regional perspectives from Central Europe (Slovakia) and Central Asia (Uzbekistan) are considered, illustrating how institutional frameworks shape money-market stability across diverse contexts. An empirical illustration of Treasury bill yields confirms that prices and interest rates are shaped by central bank monetary policy rather than spontaneous market equilibrium. The conclusion emphasizes the need for a macro-prudential regulatory framework that fosters transparency, protects smaller participants, and minimizes systemic risks. Regulation thus appears not as a restriction, but as a necessary precondition for the stability and efficiency of the money market in the 21st century.

Keywords
Financial Stability; Monetary Policy Transmission; Shadow Banking; Market Regulation; Global Liquidity

1 Introduction

The money market constitutes one of the most critical segments of the financial system, where short-term, highly liquid financial instruments with maturities usually up to one year are traded. These instruments include Treasury bills, commercial paper, certificates of deposit, and interbank market instruments (Fabozzi and Modigliani, 2009). A key feature of the money market is its ability to efficiently redistribute temporarily available financial resources among economic entities, thereby maintaining liquidity and the stability of the entire financial system (Howells and Bain, 2008; Cecchetti and Schoenholtz, 2021).

At the same time, the money market plays a significant role in monetary policy, as it is through operations in this market that central banks influence short-term interest rates and regulate the amount of money in circulation. This transmission mechanism is crucial for managing aggregate demand, price stability, and macroeconomic equilibrium (Mishkin, 2019; European

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Central Bank, 2020). Effective functioning of the money market is therefore essential not only for the stability of the banking sector but also for overall economic growth.

In economic theory, the money market is often considered an illustration of the functioning of the "free market," in which the supply and demand for capital naturally determine equilibrium prices and yields. However, in practice, this ideal encounters several limitations. Current trends, such as extensive regulation, central bank interventions, moral hazard, and the concentration of market share in the hands of a few large financial institutions, suggest that the reality of the money market increasingly diverges from the classical liberal model (Bank for International Settlements, 2022; Pilbeam, 2018). These challenges raise questions about the boundaries and sustainability of the "free market" ideal in today's globalized economy.

The aim of this article is therefore to analyze the current development of the money market, focusing on trends that challenge its traditional model, and to critically assess the extent to which it is still possible to speak of an autonomous, self-regulating financial environment.

2 Analysis of Individual Instruments

2.1 Treasury Bills

Treasury bills (T-bills) are short-term government securities issued to finance public expenditure. They are typically issued with maturities of up to one year and sold at a discount to their face value. T-bills are widely regarded as one of the safest financial instruments due to the backing of sovereign governments.

However, their safety is not purely market-driven. The demand for Treasury bills depends largely on trust in government solvency and macroeconomic stability. Central bank monetary policy significantly influences T-bill yields through policy rate adjustments and open market operations. Thus, even this seemingly free-market instrument operates within a framework of state-backed guarantees and institutional oversight.

2.2 Repurchase Agreements (Repos)

Repurchase agreements (repos) are structured as secured short-term loans. In a repo transaction, one party sells securities to another with an agreement to repurchase them at a specified date and price. Repos play a central role in liquidity provision for banks and financial institutions.

Despite their technical simplicity, repos are highly dependent on regulatory standards, collateral valuation practices, and central bank interventions. During periods of financial stress, repo markets may experience liquidity freezes, as observed during the 2008 financial crisis. Central banks frequently act as lenders of last resort to stabilize repo markets, underscoring their dependence on institutional support.

2.3 Commercial Paper

Commercial paper (CP) is an unsecured short-term debt instrument issued by corporations to finance working capital. While it appears to function within competitive market conditions, its viability depends strongly on credit ratings, investor confidence, and regulatory oversight.

The collapse of the commercial paper market during financial crises illustrates its vulnerability to systemic risk. When investor confidence deteriorates, corporations may face immediate refinancing challenges. Consequently, central banks often introduce emergency facilities to support commercial paper markets during crises.

2.4 Banker's Acceptances

Banker's acceptances are time drafts guaranteed by banks and commonly used in international trade. Their credibility rests on the financial strength of the guaranteeing bank. The instrument

demonstrates how private market transactions rely on institutional trust and regulatory capital requirements.

2.5 Eurodollars

Eurodollars refer to U.S. dollar-denominated deposits held outside the United States. Although they operate beyond direct U.S. jurisdiction, their stability depends on global banking regulations and international financial cooperation. The Eurodollar market highlights the globalized nature of money markets and their interconnected risks.

3 Limitations of the Free Market Ideal in the Era of Corporate Globalization

In the classical theoretical model of the "free market," it is assumed that a large number of relatively small, mutually competing entities operate under conditions of symmetric information, high transparency, and equal opportunities. Such an environment is expected to allow market forces to spontaneously achieve efficient capital allocation without the need for external intervention. This ideal proved relatively functional in less concentrated economies with simpler financial market structures.

However, in today's global economy and highly interconnected financial systems, it has become increasingly evident that this idealized model does not correspond to reality. As Schwarcz notes, modern financial markets function as complex and interdependent systems, where the failure of a single major institution or the uncoordinated behavior of several actors can trigger a domino effect with the potential to cause a systemic crisis. This phenomenon is known as systemic risk (Schwarcz, 2008). Regulation, therefore, cannot remain solely at the micro level (focused on individual institutions). However, it must also reflect macroprudential aspects of the financial system: relationships among institutions, external risks, and potential systemic shocks.

Another key issue is the concentration of economic and informational power. Large multinational corporations and financial institutions operate on such a scale that they can influence asset prices, capital flows, and the information environment, thereby creating unequal conditions for smaller market participants. As Stiglitz emphasizes, such an environment leads to systemic externalities, where the decisions of individual banks or investment funds may have negative consequences for the entire financial system—consequences that the market itself cannot effectively correct (Stiglitz, 2010).

3.1 Concentrated Risks and the "Too Big to Fail" Phenomenon

Institutions considered "too big to fail" implicitly expect state support in times of crisis. These expectations weaken market discipline—large institutions may engage in riskier operations because profits remain private, while potential losses are socialized. This distorts risk-taking behavior and leads to moral hazard (Acharya et al., 2010; Federal Reserve, 2020).

3.2 Interconnectedness, Complexity, and the Domino Effect

The high degree of interconnectedness among financial institutions means that problems in one bank or market segment can quickly spread throughout the system. A classic example is a liquidity crisis, where a lack of confidence and fears of default paralyze the market (European Central Bank, 2020). Such cascading effects are typical signs of the failure of the "free market" in complex systems.

3.3 Financial Innovation vs. Information Asymmetry

The emergence of complex and difficult-to-monitor financial products, including derivatives and securitized assets, has led to a situation that some authors liken to "financial alchemy" (European Corporate Governance Institute, 2022). These instruments can obscure real risks, create hidden leverage, and deepen information asymmetry. Without adequate regulation, the market's ability to assess risks effectively is undermined.

3.4 Failure of Market Self-Regulation

In theory, the market should be able to "regulate itself" through competition and the rational behavior of actors. In reality, however, investors and creditors often lack sufficient information, motivation, or capacity to monitor risky behavior by large institutions. Moreover, when major entities are systemically important, market forces often fail to prevent destabilizing practices that benefit individuals but harm the system as a whole (Acharya et al., 2010; Federal Reserve, 2020).

These factors challenge the notion that the market mechanism in modern financial environments can ensure stability, efficiency, and fairness without significant state or regulatory intervention. The following sections of this article therefore analyze specific case studies (e.g., the 2008 crisis, the COVID-19 pandemic, volatility in repo and CP markets) and assess the extent to which the concept of the "free market" remains sustainable in the context of global corporate capitalism.

4 Regulatory Framework and Its Role in the Modern Financial System

The preceding analysis shows that relying solely on spontaneous market forces—the "invisible hand"—is insufficient in the context of globally interconnected, complex financial systems. As Harmon, Bar-Yam, and colleagues demonstrate in their study, Networks of Economic Market Interdependence and Systemic Risk, the modern global economy represents a network of complex interactions in which a shock in one part of the system often triggers a domino effect with consequences for the entire market (Harmon, Y. Bar-Yam, et al., 2011). Such systemic interconnections weaken markets' ability to respond through self-regulation, thereby increasing the need for external regulatory and supervisory frameworks.

According to Acharya et al. (Acharya et al., 2010), several serious market failures, including excessive risk-taking, low transparency, and weak protection of small participants, contributed to the emergence of financial crises. They conclude that the market mechanism alone cannot ensure systemic stability if regulation focuses solely on individual risks while ignoring systemic risks.

For this reason, regulation should be viewed not as an obstacle to the market, but as its necessary precondition, a tool for creating an environment that fosters trust, responsibility, and resilience of the system as a whole. As the International Monetary Fund (International Monetary Fund, 2021) notes, effective regulation serves not only to protect small market participants but also to reduce systemic risks and ensure fair access to capital.

4.1 Key Functions of Regulation

a) Prevention of Systemic Collapses Regulation reduces the probability of cascading failures arising from strong interconnections among institutions, market segments, and countries. For example, requirements to hold adequate capital reserves lower the likelihood that a single liquidity shortfall will trigger a chain reaction across the system (Federal Reserve, 2020; International Monetary Fund, 2021).

b) Transparency and Information Disclosure Effective regulation promotes transparency in financial operations, disclosure of risk exposures, structures of derivative instruments, and

accounting standards. This helps reduce information asymmetry, which is a frequent cause of inefficient investor decisions (Acharya et al., 2010; ResearchGate, 2021).

c) Protection of Small Participants. In markets characterized by high concentration of power and informational inequality, regulation plays a crucial role in protecting retail investors, small banks, and non-professional participants who would otherwise lack the capacity to defend themselves against dominant actors (Stiglitz, 2010; Financial Regulation Courses, 2022).

d) Capital and Liquidity Requirements One of the most fundamental forms of regulation is capital adequacy requirements (e.g., Basel III), which oblige banks and other financial institutions to maintain sufficient reserves to absorb losses and shocks. These requirements also limit incentives for excessive risk-taking that could jeopardize system stability (Federal Reserve, 2020).

e) Rules of Conduct and Accountability The complex structure of modern financial instruments enables practices that maximize short-term profits for a small group of actors but may have adverse consequences for the system as a whole. Regulation can establish behavioral frameworks that account for long-term effects, externalities, and ethical standards (ScienceDirect, 2022; JSTOR, 2021).

Regulation, therefore, does not represent a denial of market principles, but rather their institutional complement in conditions where self-regulatory mechanisms cease to be effective. In global, complex, and technologically advanced markets, an active regulatory framework is an indispensable condition for stability, credibility, and sustainable development of the financial system.

5 Empirical Illustration of the Dependence of the Money Market on Regulation and Monetary Policy

Empirical analysis of key money market instruments, Treasury bills, repurchase agreements, commercial paper, and banker's acceptances shows that none of these segments operate based on pure market equilibrium. Treasury bill yields reflect central bank policy; repo operations depend on trust and legal certainty; the commercial paper market is subject to confidence volatility; and BA instruments rely on the reputation and solvency of banks.

These observations confirm that regulatory frameworks and institutional trust systemically condition the money market. Its stability and functionality do not arise from "self-regulation," but from formal mechanisms of supervision, rules, and the state's capacity to stabilize the financial environment. This supports the conclusion that, in a globalized economy, the free market alone is insufficient without a macroprudential framework (Acharya et al., 2010; Gorton and Metrick, 2012; Mishkin, 2019).

The money market is often perceived as the "purest" example of free market functioning—with high liquidity, low risk, and efficient allocation of short-term capital. International practice defines its main instruments as short-term government securities (Treasury bills), repurchase agreements (repos), certificates of deposit, commercial paper, banker's acceptances, and Eurodollars. These instruments are generally considered low risk and highly liquid, making them fundamental tools for liquidity management and short-term investment (Yaneer Bar-Yam et al., 2022).

However, their reliability does not arise spontaneously from market forces. On the contrary, it is closely tied to institutional guarantees, state credibility, central bank oversight, and firmly established regulatory frameworks. This observation directly supports the central thesis of this article: that the ideal of a self-regulating free market is not sustainable in modern, interconnected financial systems without active institutional control (Yaneer Bar-Yam et al., 2022; Stiglitz, 2010).

5.1 Treasury Bills as a "Conservative" Instrument and Their Institutional Conditioning

Short-term government securities, known as Treasury bills (T-Bills), are among the most conservative money market instruments. They are issued to cover short-term budget deficits and typically have maturities of 28, 91, or 182 days. Their yield does not arise from interest payments but from the difference between the purchase price (discount) and the nominal value at maturity. Since they represent obligations of the state, which possesses monetary sovereignty and the ability to issue new funds, T-Bills are traditionally regarded as "risk-free" (Federal Reserve, 2020). It must be emphasized, however, that this "risk-free" status does not originate from the market itself, but from trust in the state and its central institutions. The stability of these instruments is therefore the result of organized financial governance rather than spontaneous market development (Yaneer Bar-Yam et al., 2022; International Monetary Fund, 2021).

5.2 Development of T-Bill Yields as Evidence of Market Management by the Central Bank

The following table illustrates the development of yields (discount rates) of selected U.S. Treasury bills in 2025:

Table 1. Discount rates of selected U.S. Treasury bills in 2025

Type of security	Yield (approx., % p.a.)
4 week (≈ 28 days) T Bill	~3.72%
91-day (≈ 13-week) T Bill	~3.72–3.78%
182-day (≈ 26-week) T Bill	~3.63–3.70%
1 year (≈ 52 weeks) T Bill	~3.61–3.63%

Source: (A Red Ventures Company, n.d.).

This sharp increase in yields within a single year is not the result of organic movements in demand and supply for short-term investments, but rather a direct reflection of the Federal Reserve's decision to raise benchmark interest rates (Federal Reserve, 2020). It is therefore a case of macroeconomic regulation of credit conditions, which is immediately transmitted into the prices and yields of money market instruments.

As the data clearly show, T-bill yields are not determined by the market but by monetary policy. This dependence demonstrates that even the most conservative and liquid money market instruments do not operate in free competition without external intervention (Acharya et al., 2010; International Monetary Fund, 2021). The market is not autonomous—the central bank structurally and price-wise shapes it.

T-Bills, often regarded as "zero risk" instruments, do not arise from pure market equilibrium but from state credibility, regulatory rules, and monetary policy. Their example shows that even in parts of the financial system considered closest to the free market ideal, institutional shaping of behavior and prices dominates. This once again confirms that, in a globalized and complex economy, regulation is an indispensable component of the money market, not its disruption.

5.3 Regional Perspectives: Central Europe and Central Asia

Although the fundamental instruments of the money market are broadly similar across jurisdictions, their functioning is strongly conditioned by local regulatory frameworks, institutional structures, and historical development. A comparison of Slovakia (as part of the euro area) and Uzbekistan (as a transforming Central Asian economy) illustrates the diversity of approaches to money market regulation and stability.

Slovakia (Central Europe)

- Integrated into the European Union and the euro area, Slovakia's money market is subject to the rules of the European Central Bank (ECB) and European legislation.
- The National Bank of Slovakia (NBS) supervises the banking sector and implements the ECB's monetary policy domestically.
- Short-term government securities and interbank operations are closely tied to euro area liquidity management.
- Challenges include oversight of smaller banks (LSIs) and fiscal deficits, which influence the issuance of short-term government securities.
- The Slovak money market is stable but has limited autonomy, as interest rates and liquidity are determined mainly by ECB policy.

Uzbekistan (Central Asia)

- Uzbekistan is undergoing a transition from a state-dominated banking sector to a more market-oriented system.
- Since 2019, reforms have strengthened the independence of the Central Bank of Uzbekistan (CBU), with a mandate to ensure price stability and financial resilience.
- The government has launched a strategy to privatize state-owned commercial banks and liberalize the financial sector.
- The interbank market has grown rapidly, with transaction volumes exceeding 100 trillion UZS in 2023, reflecting increasing liquidity and market activity.
- Despite progress, the Uzbek money market remains heavily dependent on state oversight, currency regulation, and institutional reforms.

United States (Global Benchmark)

- The U.S. money market is the largest and most liquid globally, serving as a benchmark for international practice.
- Instruments such as Treasury bills, repos, and commercial paper are widely traded, with yields directly influenced by Federal Reserve monetary policy.
- Challenges include shadow banking, systemic risk, and the "too big to fail" phenomenon, which highlight the need for robust macro prudential regulation.

Comparative Overview

6 Conclusion

The money market plays an indispensable role in modern economies by providing liquidity, facilitating short-term capital allocation, and transmitting monetary policy. Through instruments such as Treasury bills, commercial paper, and repo operations, the financial system can function effectively both in everyday operations and during periods of crisis. However, their apparent simplicity and low risk often conceal the fact that their stability and reliability are not the result of spontaneous market mechanisms, but instead of institutional oversight, trust in the state, and regulatory frameworks.

As demonstrated by the empirical analysis of Treasury bill yields in 2024–2025, money market interest rates are not solely determined by supply and demand. They are actively influenced

Table 2. Discount rates of selected U.S. Treasury bills in 2025

Criterion	Slovakia	Uzbekistan	United States
Regulatory framework	EU/ECB integration, NBS oversight	Reforming the system, privatization, and the new CBU law	Federal Reserve + SEC, highly developed
Main authority	Slovak National Bank	Central Bank of Uzbekistan	Federal Reserve System
Market conditions	Stable, ECB-driven	Liberalizing, growing interbank market	Deep, liquid, global benchmark
Challenges	Oversight of small banks, fiscal deficits	Privatization, building robust regulation	Shadow banking, systemic risk
Market character	Stable, regulated, low autonomy	Transforming, state-influenced	Global, highly liquid, systemic

by central bank monetary policy, confirming that even the most conservative segments of the market do not function autonomously.

In theoretical terms, the free market model rests on assumptions of decentralization, information symmetry, and equal opportunity. In the reality of a globalized economy, however, high interconnectedness, power concentration, and systemic risks dominate, factors that the market alone cannot manage. Regional perspectives reinforce this conclusion: Slovakia's money market is stable but highly dependent on ECB policy; Uzbekistan's market is expanding yet remains strongly shaped by state oversight and ongoing reforms; and the United States, while serving as a global benchmark, faces challenges of shadow banking and systemic risk. These examples demonstrate that across diverse contexts, the money market cannot sustain itself without institutional frameworks.

- The money market is essential for maintaining liquidity and financial stability, but its functioning is unsustainable without a regulatory framework that accounts for systemic risks and macroeconomic factors.
- The free market ideal, based on the invisible hand and self-regulation, proves insufficient in the context of global, complex, and technologically advanced economies.
- It is therefore necessary to build and maintain a macro prudential framework that not only responds to crises but also proactively shapes market behavior, enhances transparency, protects smaller participants, and reduces systemic risk.

In conclusion, regulation should not be seen as a restriction on market freedom, but rather as its prerequisite in the 21st century. A truly effective and stable money market emerges only where market dynamics are supported by a responsible, transparent, and credible institutional environment—whether in Central Europe, Central Asia, or the global benchmark of the United States.

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