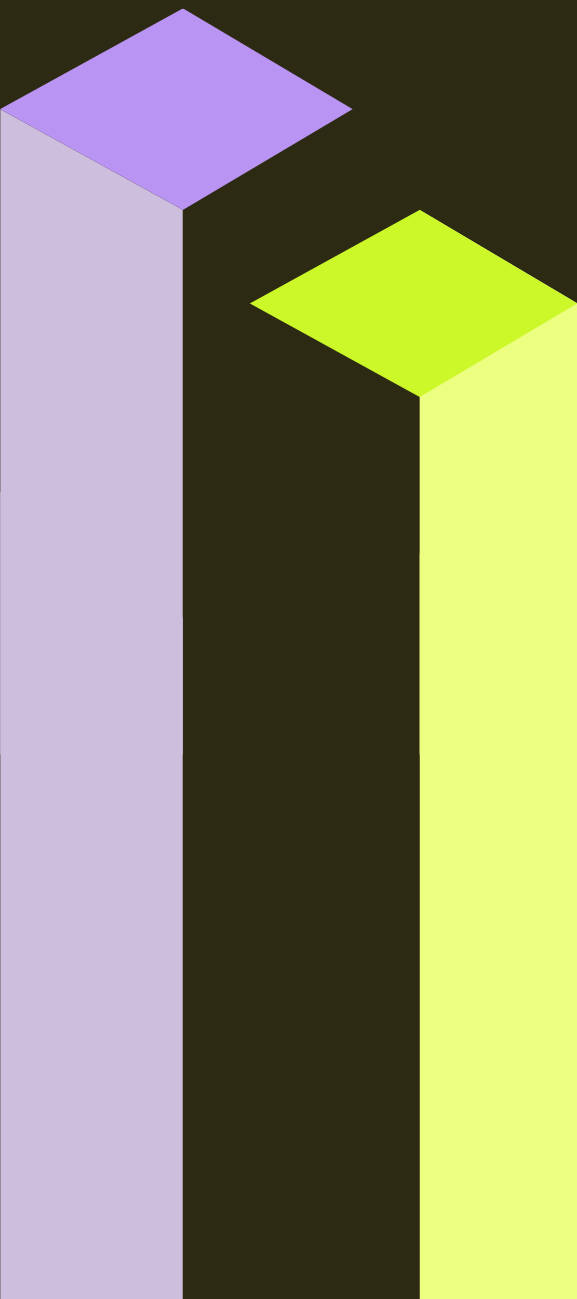


MARKET STRUCTURE IN FOCUS

**EXCHANGES ARE PLATFORMS AND NOT
ALL COMPETITION IS THE SAME**

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EXCHANGE

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Introduction

Stock exchanges are fundamental to the global economy, acting as platforms that connect individual investors, financial institutions, and companies. They not only enable the buying and selling of assets but also play a crucial role in the formation of fair prices and the allocation of capital.

The advancement of technology has significantly impacted the business models of exchanges. The speed and reduced transaction costs, global access, and increased transparency and security are among the main factors affected.

Competition between exchanges is a global reality, as is the rise of alternative¹ trading platforms, which elevates the level of discussion regarding different market structures.

Exchanges are multilateral platforms

Even before the consolidation of the concept of digital platforms as we know them in modern economics, stock exchanges were already correctly referred to as trading platforms.

In general, digital platforms are understood as facilitators of interactions between different user groups, creating value for all participants involved by enabling exchanges and connections that would not be as easy or efficient otherwise². Important aspects include the use of technology, the creation of an ecosystem, the establishment of clear rules, transparency in data disclosure, and continuous feedback for improvements.

Exchanges are multilateral platforms that connect individual investors, financial institutions, companies, and other participants, providing an environment in which multiple parties can interact and conduct business in a regulated, informed, and efficient manner. Exchanges create value not only by facilitating the meeting between buyers and sellers but also by reducing transaction costs,

¹ Alternative trading platforms refer to securities trading systems outside traditional exchanges, providing investors with additional venues to buy and sell stocks. They typically feature different operating rules, greater flexibility, and, in some cases, lower costs, serving as a complement or alternative to traditional markets.

² Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You is a book written by Geoffrey G. Parker, Marshall W. Van Alstyne, and Sangeet Paul Choudary.



increasing the likelihood of success in finding counterparts, and promoting better price formation of the traded assets.

Factors such as service level, innovation, technology, business rules, and ease of use influence the ability of exchanges – as well as platforms in general – to attract participants to their markets.

Not all platforms are the same

Traditional exchanges are known for their fundamental role in the global economy, facilitating the trading of assets and ensuring transparency and efficiency in the allocation of financial resources. Their relevance is largely due to the fact that they are primarily responsible for the process of price formation of financial assets, also known as price discovery³.

Subject to the specific regulations of their countries, exchanges have their technologies, rules, and processes built in a way that best fulfills their primary objective of using all the information provided by buyers, sellers, and issuers to form fair and efficient prices while facilitating transactions between investors. Any deviation from this objective should be addressed with caution.

To achieve this, traditional exchanges integrate two essential aspects:

- (i) Fair and non-discriminatory access – based on objective, pre-defined, and public criteria, all types of investors and regulated intermediaries must have equitable access to the exchange's systems and services. These criteria cannot be used to favor certain types of investors over others.
- (ii) Pre- and post-trade transparency – it is essential to ensure that clients make buy and sell decisions based on sufficient and adequate information, promoting efficient price formation. Although exchanges do not control the disclosure of information outside their environment, they have the duty to provide real-time transparency on trading conditions and to disclose transaction details immediately after they are executed.

³ Price discovery is the process by which an exchange determines the market price of an asset based on the interaction between supply and demand. This mechanism allows participants to identify the fair buy and sell value in real-time, reflecting market conditions and expectations.



These two aspects are fundamental for the price formation process to be efficient, maximizing the chances that all available information, as well as market expectations, are reflected in the prices.

However, not all platforms are the same.

Common in the American and European markets, alternative trading platforms also aim to facilitate asset transactions between buyers and sellers⁴, but without the need to follow the same rules as traditional exchanges. Common examples of these platforms include Crossing Networks, such as Dark Pools and Block Trading Facilities, as well as order internalizers, typically operated by brokerage firms that become counterparties to their own clients.

Although they share the common goal of traditional exchanges in facilitating the meeting of buyers and sellers, alternative platforms play a secondary role in the asset price formation process. In general, they rely on asset prices traded on traditional exchanges as a benchmark to match offers in their own environments.

Unlike traditional exchanges, alternative platforms are not accessible to all types of investors and have minimum pre-trade⁵ transparency requirements. This largely explains why they contribute less to the price formation process, although they are important for fostering liquidity and meeting the specific demands of some investors and intermediaries.

The issue of liquidity fragmentation

The coexistence of trading platforms, such as traditional exchanges and alternative platforms, within the same jurisdiction naturally generates different impacts on the structure of this market.

As present in modern literature, competition in the trading platform environment contributes to the formation of more efficient markets. This efficiency is often the result of factors such as technological innovation, an increase in the supply of products and services, reduction of implicit and explicit execution⁶ costs, greater agility in responding to user demands, among others. Efficient markets attract issuers and investors, leading to increased liquidity and a

⁴ With the exception of order internalizers, who use their own capital and become counterparties to their clients.

⁵ Although, historically, alternative platforms with pre-trade transparency have migrated their licenses to those of traditional exchanges, there is still a limited number that offers transparency in the publication of quotes.

⁶ Explicit costs are those directly identifiable, such as brokerage fees and Exchange fees. Implicit costs, on the other hand, involve indirect impacts, such as the bid-ask spread and the market impact caused by the execution of an order. Both influence the total cost of a transaction.



proportional reduction in spreads⁷, with greater convergence between buyers and sellers.

On the other hand, although competition fosters efficiency and innovation, it also brings challenges that need to be managed to ensure the market operates fairly and efficiently for all participants. These challenges are often related to liquidity fragmentation, which could result in a dispersed price formation process and potentially increase costs for investors in obtaining reference prices on each exchange.

In this regard, the number of platforms promoting competition within the same asset class is an important variable in the balance between the benefits of competition versus the challenges of multiple platforms operating simultaneously. In other words, there is a point at which the gains in efficiency, innovation, and quality are maximized; beyond this point, the addition of new platforms tends to generate costs for participants, with diminishing marginal returns.

Therefore, not all competition is the same, and its effects – both positive and negative – can vary depending on the number of platforms, their characteristics (whether traditional exchanges or alternative platforms), and the technological maturity of the markets and participants.

a. Traditional exchanges have indirect network externalities

Consider two exchanges from different countries, such as the NYSE in the United States and the B3 in Brazil. Although both share similarities regarding the main characteristics of their markets (non-discriminatory access, pre- and post-trade transparency, continuous trading, among others), they trade different assets – serving as important tools for price formation in their respective markets.

It may seem easy to understand that both operate as independent and isolated platforms, each in its own jurisdiction and trading distinct assets⁸. However, there are at least two common aspects: part of their users, including investors, brokers, and market makers, are shared, accessing both markets, and the assets traded have some level of correlation⁹.

⁷ The spread is the difference between the buy price (ask) and the sell price (bid) of an asset on a stock exchange. This difference reflects the liquidity of the asset and transaction costs, serving as an important indicator of market efficiency.

⁸ Excluding, for the purposes of the example, ADRs and BDRs.

⁹ Correlation between two or more assets represents the degree of relationship between their price movements.



Therefore, although they are two independent exchanges, what happens on one exchange reflects, in some way, on the other. This reflection is directly proportional to the size of the shared customer base and the level of correlation between the assets they trade. This effect would not occur if the customer base of one exchange had no visibility over what happens on the other. Similarly, even if there were visibility, it would not make a difference if the assets traded on each exchange had absolutely no relation to each other.

This indirect network externality is present in traditional exchanges and is maximized when both exchanges operate within the same jurisdiction, trading literally the same assets and being observed by the same investors. Transactions carried out on one exchange are instantly reflected on the other, as both are "connected" by the same customer base. Price distortions for an asset only last for milliseconds, as they are quickly captured by arbitrageurs. This dynamic keeps the price formation process efficient and cohesive.

In this case of competition between traditional exchanges, which operate under transparency of information and broad, non-discriminatory access, the potential negative effects of liquidity fragmentation are minimized.

b. Technology simplifies for the investor by transforming multiple exchanges into a single virtual market

The evolution of technology has played a key role in transforming stock markets over the past few decades. Technological innovations have changed the way exchanges operate, improving efficiency, speed, and accessibility of trades. From the investor's perspective, technology has simplified the user experience, especially in an environment with multiple exchanges.

For example, the U.S. market currently has 16 traditional exchanges¹⁰, including the well-known NYSE and NASDAQ. It seems unfeasible to imagine that each investor would need to manually handle each one individually, receiving asset price information in a segregated manner and having to choose, order by order, which exchange offers the best trading conditions.

Through smart order routing systems, where orders are automatically sent to the exchange with the best trading conditions, and quote consolidators, which

¹⁰ 5 NYSE affiliates, 3 NASDAQ affiliates, 4 CBOE affiliates, plus IEX, MEMX, LTSE, and MIAX.



provide a unified view of the order book, investors operate as if they were trading in a single virtual market—eliminating the need to monitor different markets individually and making the investment process more efficient and less complex. These technologies are commonly offered by brokers and technology providers, who specialize in such services as a way to differentiate themselves and add value for their clients.

Smart routers have evolved to efficiently integrate traditional exchanges, leveraging real-time quotes, and alternative platforms, which, in the absence of pre-trade transparency, use statistical approaches.

For that reason, technology plays an essential role in the development of market structures by maximizing the benefits of competition while minimizing the impacts of liquidity fragmentation, unifying markets for the investor and generating efficiency—which attracts issuers and investors.

About the Author:

Francisco Gurgel is an engineer and a specialist in stock exchange market structure and electronic trading technology for equities and derivatives. With extensive experience in the financial sector, he is the founder of BASE Exchange and Flowa Technologies, companies that reflect his commitment to innovation and the development of the capital markets in Brazil.

