

A photograph of numerous coins of various colors (gold, silver, copper) scattered across a light blue surface of water. The water is rippled, creating a textured, wavy background. The coins are scattered throughout the frame, some appearing as bright highlights and others as darker, more muted tones.

ENHANCING LIQUIDITY IN EMERGING MARKET EXCHANGES

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OLIVER WYMAN | WORLD FEDERATION OF EXCHANGES

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1

EXECUTIVE SUMMARY

Trading venue liquidity is the fundamental enabler of the rapid and fair exchange of securities and derivatives contracts between capital market participants. Liquidity enables investors and issuers to meet their requirements in capital markets, be it an investment, financing, or hedging, as well as reducing investment costs and the cost of capital. Through this, liquidity has a lasting and positive impact on economies. While liquidity across many products remains high in developed markets, many emerging markets suffer from significantly low levels of trading venue liquidity, effectively placing a constraint on economic and market development.

We believe that exchanges, regulators, and capital market participants can take action to grow liquidity, improve the efficiency of trading, and better service issuers and investors in their markets. The indirect benefits to emerging market economies could be significant.

In this report we assess three areas that exchanges and regulators can focus on to grow liquidity:

- **Promoting the development of a diverse investor base** with a focus on attracting local and international institutional investors, and enhancing retail participation.
- **Increasing the pool of securities and associated financial products** by increasing the number of local or foreign listings, launching derivative and ETF products, or creating market linkages.
- **Investing in the creation of an enabling market environment** through the improvement of trading technology, market and reference data, the implementation of market-maker schemes, or developing securities lending and borrowing schemes.

There are a number of different levers that can be used to achieve these aims. The use of these levers is dependent on the maturity of the market in question:

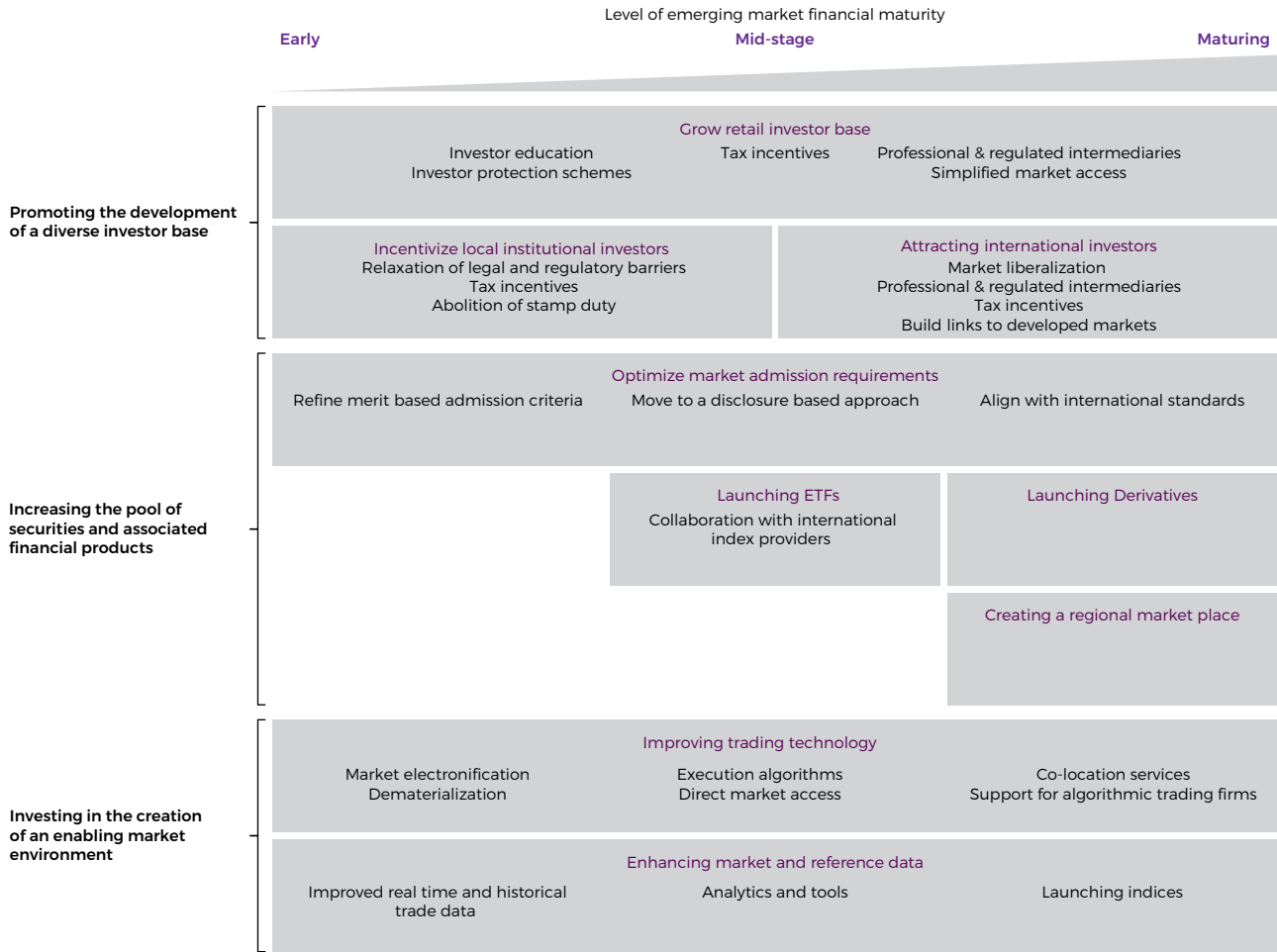
- **Early-stage** emerging markets typically focus on core market enhancements such as electronification and attracting local investors and issuers. This may require working collaboratively with governments and regulators to bring about changes to regulations and tax laws.
- **Mid-stage** emerging markets are able to focus on transitioning toward a disclosure-based listing regime as well as attracting international issuers and investors, and on expanding their overall product offering.
- **Maturing** emerging markets tend to focus on many of the same capabilities employed by the most developed market exchanges, such as alignment of standards and regulatory principles with international best practices, enhancing market access, building networks of intermediaries, and technological enablement such as co-location and algorithmic trading.

We also note that each emerging market country is unique, with its own mix of investors and issuers, differing levels of economic and market development, and technological and regulatory standards. While the framework in Exhibit 1 provides a useful indication of prerequisite levers to support liquidity development, understanding the mechanisms that have been successful in other markets is important.

This report notes that not all liquidity is equal. In many markets, there is still debate regarding the long-term impact of liquidity enhancing mechanisms, such as certain types of electronic trading and market-making schemes. Any lever used to grow liquidity will invariably have an impact on the quality of the liquidity¹.

¹ Oliver Wyman: Trading Venue Liquidity – It's quality not quantity that matters
<http://www.oliverwyman.com/insights/publications/2016/jun/trading-venue-liquidity.html#V-OHAzXN5-8>

Exhibit 1: Liquidity levers and stage of market development



Ultimately each country must evaluate the complexities – be they strengths or weaknesses – of their own market structure. Each country needs to assess the requirements of their ecosystem and level of market development to determine the levers that will yield the greatest improvement in liquidity. We have provided a summary guide in this report which indicates both the approximate level of market sophistication and key success factors for each lever.

2

THE IMPORTANCE OF GROWING LIQUIDITY

Liquidity is a critical component of financial market development. As liquidity serves to deepen and strengthen financial markets, measures aimed at promoting liquidity will have a positive impact on overall financial market development. Growing liquidity is therefore a critical objective for market regulators, exchanges, issuers, and investors.

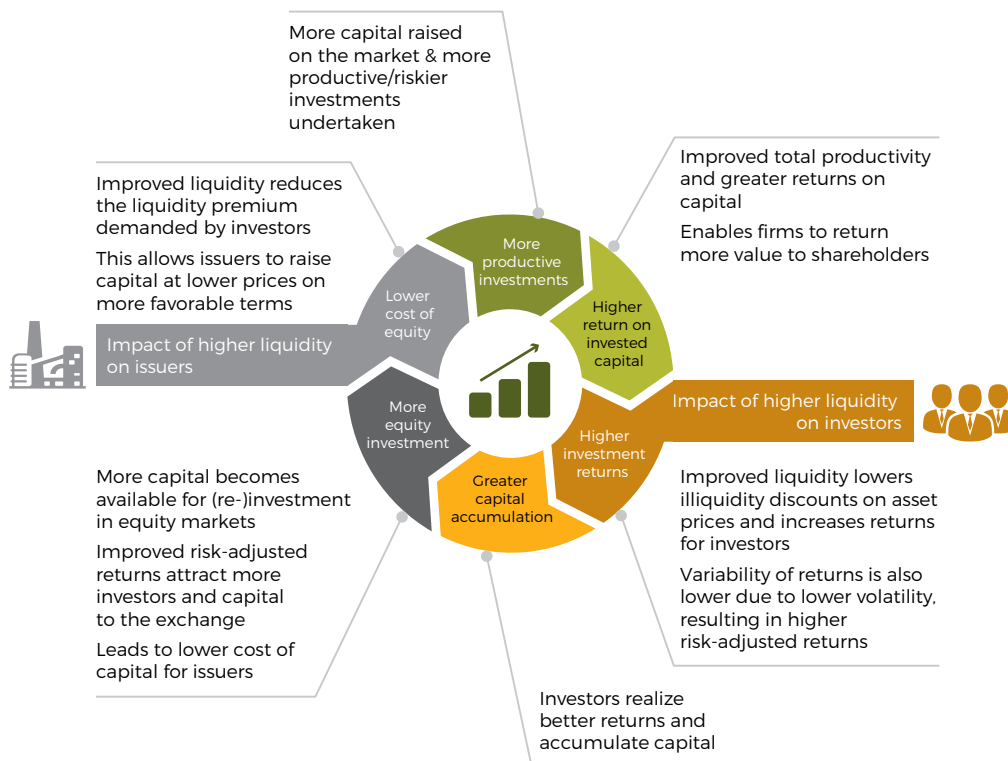
WHY LIQUIDITY MATTERS

The importance of market liquidity and its relationship to financial market development can be understood by examining the impact on various market actors:

- For **investors**, more liquid markets are associated with lower costs of trading, an ability to move more easily in and out of assets, lower price volatility, and improved price formation.
- **Issuers** are attracted to more liquid markets, as they reduce the cost of raising capital and produce more accurate share price valuations.
- **Stock exchanges** value the increased attractiveness to issuers and investors, as this translates into greater use of the market, greater confidence, greater ability to attract new stakeholders, and greater ability to do business, which drives revenues both directly (through trading fees) and indirectly (through extending their product offering, for example).
- **Economies** as a whole benefit, with companies able to access capital at a reasonable cost, subsequently increasing investment in their business and driving increased employment and their overall contribution to the economy.

As Exhibit 2 summarizes, higher liquidity creates a virtuous cycle with positive spill over effects for the underlying economy.

Exhibit 2: Cyclical benefits of market liquidity



DEFINING LIQUIDITY

Stock market liquidity can be broadly understood as the ability to facilitate large volumes of trade without causing excessive price movements, while still reflecting a steady and fair market price. This concept of liquidity encompasses multiple dimensions, namely:

- **Breadth:** the cost of reversing a position over a short period. Breadth is usually identified (and measured) by the bid/ask spread (the tighter the spread, the better).
- **Depth:** a deep market has large numbers of pending orders on both sides of the bid/ask spread. This limits the influence of orders on prices.
- **Resilience:** the speed at which prices return to stability after a shock.
- **Immediacy:** the speed at which trades can be conducted at a given cost.

Market operators, investors, regulators, and others use a range of metrics to assess liquidity. These include bid-ask spreads, turnover, and turnover velocity (value traded relative to the overall market capitalization). For the remainder of this report, we use turnover measures (volume and value traded, and turnover velocity) as proxies for liquidity².

EMERGING MARKETS LIQUIDITY

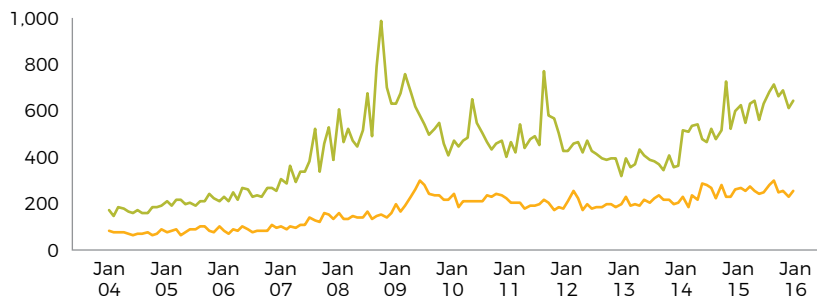
Emerging market exchanges³ have grown dramatically in both size and activity over the past 15 years. Market capitalization has increased 148 percent, from US\$3 trillion to nearly US\$7.5 trillion (representing a CAGR of 8.6 percent), while the annual value traded has increased 67 percent, from US\$1.8 trillion to just over US\$3 trillion between 2004 and 2015 (CAGR of 4.8 percent). However, this growth has been uneven and has not been associated with a commensurate growth in liquidity. Over the same period, turnover velocity has fluctuated, reaching nearly 60 percent at some points but ending 2015 at just over 40 percent. Developed markets, meanwhile, were at 54 percent liquidity as of the end of 2015 (Exhibit 3).

² Despite the acknowledged shortcomings of these metrics, they have the benefits of simplicity and ready availability of data.

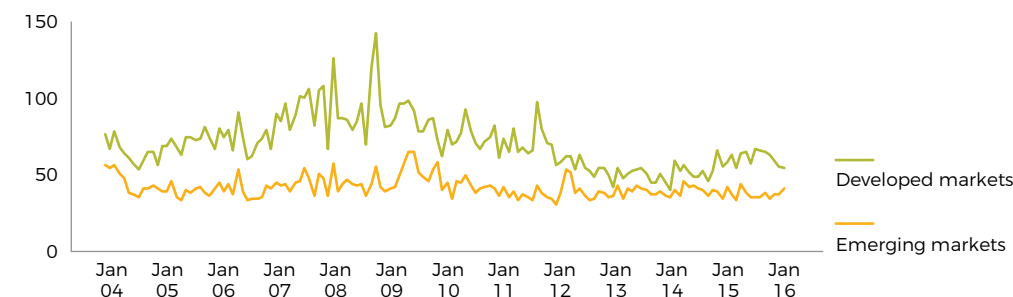
³ The WFE uses the FTSE classification for purposes of categorizing exchanges as 'developed' or 'emerging'. The WFE member exchanges that fall into these categories are set out in the appendix.

Exhibit 3: Growth in trades and turnover velocity in developed and emerging markets ^{4, 5}

Electronic Order Book (EOB) trades (MM)



Turnover velocity (%)



Source: WFE data

This report highlights a range of mechanisms that emerging market exchanges can use to improve liquidity in their own markets. Improving liquidity is not straightforward. Financial systems are inherently complex, with outcomes and changes that are the result of a series of interactions rather than a single event. An exchange’s ability to influence liquidity in its market is constrained by its broader operating environment.

Moreover, emerging market exchanges are highly varied, with differing investor bases, issuers, product mixes, geographical links, and legislative and regulatory frameworks. As such, the levers in this document cannot be viewed formulaically (in the sense of “if this, then that”), or as equally relevant for all. They should be viewed rather as part of a range of interventions that exchanges and regulators could consider to enhance market liquidity.

4 To ensure data comparability, these graphs include the following exchanges: BM&FBOVESPA, Bolsa de Comercio de Buenos Aires, Bolsa de Comercio de Santiago, Bolsa de Valores de Colombia, Bolsa de Valores de Lima, Bolsa Mexicana de Valores, BSE India Limited, Bursa Malaysia, Colombo Stock Exchange, Indonesia Stock Exchange, National Stock Exchange of India, Philippine Stock Exchange, Stock Exchange of Thailand, Taipei Exchange, Taiwan Stock Exchange Corp., Athens Stock Exchange, Budapest Stock Exchange, Johannesburg Stock Exchange, Tehran Stock Exchange, Warsaw Stock Exchange, Amman Stock Exchange, Egyptian Exchange, Stock Exchange of Mauritius, Tel-Aviv Stock Exchange, Saudi Stock Exchange.

5 According to the WFE definition, EOB trades are defined as “the transfers of ownership effected automatically through the exchange’s electronic order book where orders placed by trading members are usually exposed to all market users and automatically matched according to precise rules set up by the exchange, generally on a price/time priority basis”.

CASE STUDY 1: THE PHILIPPINE STOCK EXCHANGE EXPERIENCE WITH GROWING MARKET LIQUIDITY

OVERVIEW

The Philippine Stock Exchange is an example of an earlier stage emerging market that has implemented many of the mechanisms highlighted in this report, to positive effect.

IMPACTS

- Turnover velocity increased from 12 percent to 16 percent from 2004 to 2015.
- Number of trades grew from 270,000 in 2004 to over 12 million in 2015.

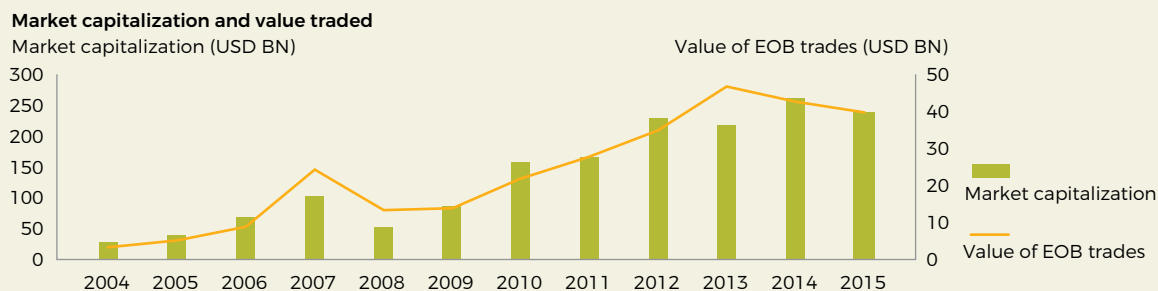
KEY LESSONS LEARNED

- Market improvements result from the interaction of a variety of interventions, rather than a single initiative.

DETAIL

The Philippine Stock Exchange (PSE) has grown significantly over the past 13 years, with total value of shares traded reaching US\$40 billion in 2015 from only US\$3.2 billion in 2004 (+26 percent CAGR).

Philippines Stock Exchange



Source: WFE data

Bolstered by a flourishing Philippine economy, this growth in the market and underlying market liquidity was the result of a variety of interventions that PSE, market regulators, and policymakers introduced over the years, including:

- **Encouraging greater investor participation in the market:** From 2004, secondary share trading on the exchange, as well as securities lending and borrowing, have been exempted from stamp duty. More recently, the PSE assisted the Insurance Commission in establishing guidelines which allowed insurance companies to invest in ETFs.
- **Promotion of investor education and financial literacy:** In June 2006, the Philippine Commission on Higher Education (CHED) introduced capital markets in business administration courses for those majoring in finance. PSE also launched its market education website⁶ in 2011, which includes education and support services.
- **Strengthening corporate governance and listings standards:** International corporate governance standards have been adopted; in addition, the PSE has reinstated the requirement for listed companies to maintain a minimum 10 percent free float in their shares.
- **Diversification of investment products:** The PSE and the Singapore Exchange (SGX) launched the SGX-PSE MSCI Philippines Index Futures on November 25 2013, providing new investment products and a pathway to establish a derivatives market. The PSE listed its first ETF in the same year.
- **Investment in technology:** The PSE has used technology to extend market reach, rolling out Tradex in 2013, which allows users to trade, monitor, and manage their stock portfolio, and obtain real-time market information. PSEtrade XTS, a new trading platform, was launched in 2015.

⁶ The PSE Academy – www.pseacademy.com.ph

3

PROMOTING THE DEVELOPMENT OF A DIVERSE INVESTOR BASE

Promoting a diversified domestic investor base, including both retail investors and a range of institutional investors with different investment horizons and perspectives, is central to the development of domestic equity markets. In addition, the right investor mix ultimately depends on the goals being pursued by trading participants. In early-stage financial markets, policymakers, regulators, and exchange operators focus both on increasing long-term domestic savings and enabling the investment of a portion of those savings into equity markets. Whether a jurisdiction begins by focusing on retail or institutional investors will depend on market-specific considerations. Some markets may have a large retail investor base from the outset, while others will have to grow that investor segment over time. As the market matures, regulators and market operators continue to promote the development and diversification of the domestic investor base, while also opening the market to (greater) international investment.

INCREASING PARTICIPATION OF LOCAL INSTITUTIONAL INVESTORS

In many early-stage emerging markets, the size of the institutional investor base is small and often highly concentrated, with relatively low levels of assets under management and limited participation in equity markets. The reasons for this vary between markets, but examples include:

- The presence of pay-as-you-go pension schemes that restrict the development of a competitive private pension fund sector.
- 'No annual loss' requirements for pension funds that compel them to invest in low-risk financial instruments, thereby limiting participation in equity markets.
- Regulatory restrictions on who may manage pension fund assets, thereby limiting the emergence of a competitive asset management industry.
- Regulatory restrictions, including outright prohibitions on pension fund and other institutional investment in equity markets.

Emerging market jurisdictions have sought to address these by **transforming pensions schemes** by eliminating or reducing the size of defined benefit or pay-as-you-go pension schemes, the **removal or relaxation of legislative and regulatory barriers** to investment in equity markets, and the use of **tax incentives**, including the **abolition of stamp duty**, to encourage both the allocation of funds to institutional investors and the funneling of investments into equity markets. Examples of interventions include the following:

- In Brazil, private pension fund contributions are exempt from tax, and mutual funds are exempt from transaction taxes. The Brazilian Monetary Council has also allowed pension funds to adopt a more aggressive investment approach, while still emphasizing high standards of transparency, control, and supervision.
- Regulators removed the 'no annual loss' requirements for non-state pension funds (NPFs) in Russia in 2013 and introduced incentives for investors who stayed with fund managers for a minimum of five years. The share of equities in NPFs has increased from 6 percent in 2013 to 13 percent in 2015.
- In India, regulators and policymakers stimulated the growth of the insurance sector by allowing greater product innovation, and also recently allowed the Employees Provident Fund Organization to invest up to 15 percent of assets in equities.
- In Egypt, the regulator abolished a stamp duty of 0.1 percent in 1995. Meanwhile, in the Philippines, the legislature exempted all secondary market stock trading from stamp duty in 2009.

PROVIDING AN ENABLING ENVIRONMENT FOR RETAIL INVESTORS

Growing the retail investor base requires **investor education**, the presence of a suitable **investor protection scheme**, and the existence of **mechanisms to facilitate access to markets**. **Tax incentives** may also encourage increased retail savings and investment.

Providing investor education and improving financial literacy are essential to increase retail participation. They are particularly important where levels of financial literacy are low. A number of markets have introduced highly successful education programs. For example, the Stock Exchange of Thailand has a dedicated education arm (see case study below).

In addition to providing retail investors with the tools to understand the risks of investment, regulators and market operators also ensure the existence of **relevant investor protection schemes**. These include providing investors with accessible dispute resolution mechanisms, creating a fund to compensate investors who suffer financial loss due to misconduct by intermediaries (available as a last resort where the bank/broker is not able to 'make good' the client), and ensuring that investments targeting retail investors are presented in an understandable manner. For example, in Singapore, the Money Authority (MAS) introduced facilitated prospectuses to attract retail investors, conveying the main risks and product information in everyday language.

For many retail investors, the costs of accessing the market may discourage market participation. Mechanisms that simplify market access help to reduce these costs. In India, the market regulator recently announced that it would permit the direct distribution of mutual funds via e-commerce platforms, coupled with the introduction of greater disclosure of commissions and agent fees by mutual funds.

Finally, the use of **tax incentives** can act as a simple and effective method to attract retail flows. In Thailand, for example, individual investors are exempted from paying taxes on capital gains from stock trading. In Egypt, investors were until recently exempt from dividends or capital gain taxes, although this changed in July 2014 when a cash dividend tax was introduced (albeit at a lower level than many other emerging markets).

It is worth noting that a preponderance of retail investors may be associated with increased volatility and bubbles. As such, incentivizing retail participation should be approached carefully and coupled with investor education. Retail investor-induced volatility can also be reduced by funneling retail investment through indirect market access, for example, mutual funds or ETFs.

CASE STUDY 2: ATTRACTING RETAIL INVESTORS TO THE STOCK EXCHANGE OF THAILAND

OVERVIEW

The Stock Exchange of Thailand and its market authorities have dramatically increased retail participation through a number of initiatives in recent years.

IMPACTS

- Doubled the number of retail accounts over five years, to approximately 1.2 million.
- Retail investors account for 55 percent to 60 percent of value traded.

KEY LESSONS LEARNED

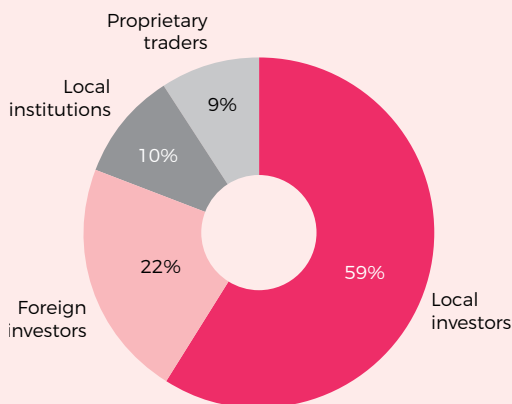
- Attracting retail investors required a multifaceted approach.
- Engagement with regulators is essential.

DETAIL

At the end of May 2016, the Stock Exchange of Thailand (SET) was the second-largest exchange in the ASEAN region by market capitalization in USD terms and the largest by number of trades, value of trade, and turnover velocity. This fairly remarkable growth trajectory, while obviously tied to the growth of the economy, is also the result of a range of interventions from the exchange, market participants, and market regulators.

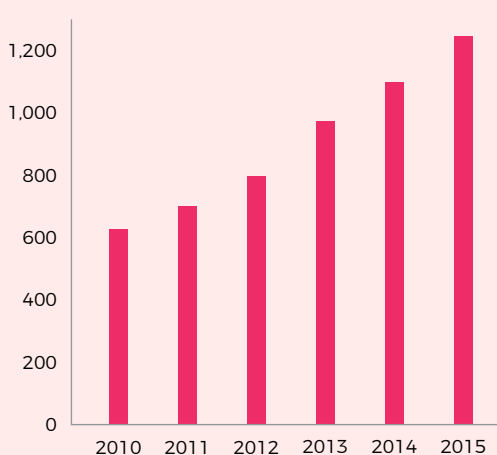
Stock Exchange of Thailand

Investor Composition as at end of 2015



Stock Exchange of Thailand

Number of retail trading accounts ('000s)



Source: Stock Exchange of Thailand

Retail investors account for somewhere between 55 percent and 60 percent of average value traded. The exchange attributes these high levels of retail participation to a range of factors: the low interest rate environment that has encouraged investors to seek higher returns; the diversity of companies listed on the exchange; the availability of a wide variety of other investment products such as ETFs and derivatives; technology that allows investors to invest through a number of investment channels; and a large number of retail brokerage firms.





The exchange and market authorities have taken a number of measures over the years to address access and transaction costs for market participants:

- Exempting transactions on the exchange from capital gains tax.
- Introducing a 'banker-to-broker' program in 2011, which allowed investors to open securities brokerage accounts at commercial bank branches.
- Fully liberalized broker fees in 2012, associated with a sharp increase in trading volumes.
- Providing securities firms with access to an online trading platform that they make available to their clients, to allow them to place orders with their securities brokers using mobile devices.

In addition, the exchange has developed a range of targeted educational programs which are differentiated according to levels of understanding and sophistication. SET also encourages all companies listing on the exchange to establish a provident fund for employees, within which employees are allowed to set different risk profiles for their provident fund investments. SET then works with these organizations to educate employees about investment choices and align their risk profile with their retirement needs. More broadly, SET has sought to enhance the quality of corporate governance, ensure the robustness and security of IT infrastructure, and develop and enforce minimum quality standards in relation to investment professionals and market intermediaries.

ESTABLISHING A NETWORK OF PROFESSIONAL INTERMEDIARIES

Regardless of whether a jurisdiction is focusing on retail or institutional investors, it is critical from the earliest stages of market development to promote **a network of professional and appropriately regulated intermediaries**. In 1998, for example, the National Stock Exchange of India introduced the Certification in Financial Markets (CFA), an online testing and certification program, to ensure that financial market intermediaries adhere to a requisite code of conduct and possess the required skills and knowledge to act as market intermediaries.

ATTRACTING INTERNATIONAL INVESTORS

Most markets only begin to focus on international investors once they have a reasonably developed domestic investor base and professional market intermediaries, as foreign portfolio flows can have a destabilising effect on markets. If such a suitable foundation exists, however, foreign investors can have a positive influence on stock market liquidity and market development, both directly through the provision of additional capital and activity in the market, and indirectly through the importation of higher corporate governance standards.

In some markets, it is necessary as a starting point to remove regulatory barriers to international participation. Regulators may prefer to adopt a phased approach to **market liberalization**. For example, it was only after joining the World Trade Organization (WTO) in 2001 that the People's Republic of China selectively opened its securities market to foreign institutional participation through the introduction of the Qualified Foreign Institutional Investor (QFII) program. The Saudi Stock Exchange (Tadawul), meanwhile, could historically only be accessed by institutional investors from outside the Gulf Cooperation Council (GCC) via ETFs. In June 2015, the Saudi Capital Markets Authority partially opened the market to allow direct international investment by qualifying institutional investors. This initiative seeks to diversify the investor base beyond the largely retail, domestic investor base.

In addition to removing or relaxing regulatory barriers to international investment, markets may also look to facilitate international participation through **forging links with other markets**. An example of a bilateral linkage initiative is the Shanghai – Hong Kong Stock Connect program.

CASE STUDY 3: SHANGHAI – HONG KONG STOCK CONNECT

OVERVIEW

The Hong Kong and Shanghai markets implemented a two-way trading link, coupled with increased access for international investors to the Chinese market.

IMPACTS

- Limited impact on trading volumes to date, although the measures have served to further liberalize the Chinese market.

KEY LESSONS LEARNED

- Regulatory restrictions may dampen investor appetite by creating uncertainty and market distortions.

DETAIL

In November 2014, the Hong Kong Exchange and the Shanghai Stock Exchange launched an order routing and clearing and settlement facility that enabled trading through the market structures of the respective exchanges:

- Northbound: Allows investors outside mainland China to trade selected equities on the Shanghai Stock Exchange (SSE), through Hong Kong brokers. The settled shares are held in trust in Shanghai on behalf of the foreign investor.
- Southbound: Allows institutional investors and retail investors with a minimum aggregate balance in their securities account in mainland China to trade selected equities on the Hong Kong Stock Exchange, through members of the SSE. The shares are held in trust in Hong Kong on behalf of the Chinese investor.

Both northbound and southbound trade activity were initially subject to daily and overall quotas (limits on values that could be traded).

Despite predictions that the offering would result in a flood of cross-border trading activity, investment flows in both directions were still below the quota limits nearly two years after the links were established. In addition, regulatory restrictions (such as on the ability to short-sell Shanghai-listed shares) limited arbitrage between the markets, resulting in A-shares listed in mainland China at one point trading at a 30 percent premium to H-shares of the same companies listed in Hong Kong.

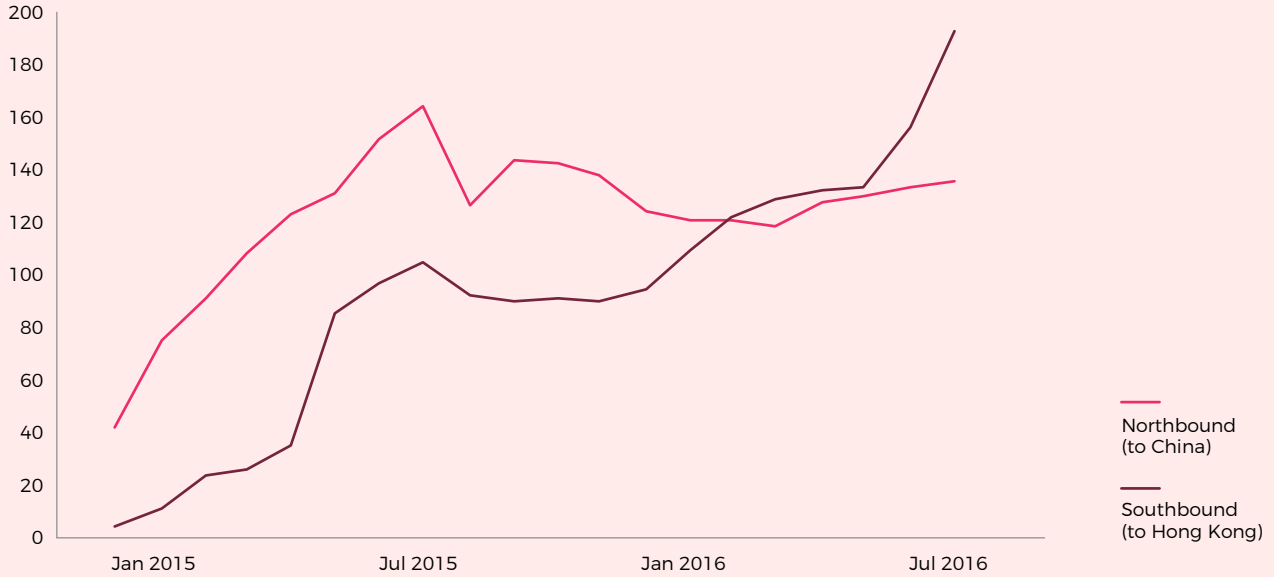
Hong Kong and Chinese securities market regulators recently announced the expansion of the linkage program to include Shenzhen-listed securities, with the intention of extending it still further to include ETFs in due course. While investing through the link will be subject to daily quota limits, there are no overall quota limits, and the overall limits on the Shanghai link are being removed. Analysts expect that the Shenzhen-Hong Kong link will go live in December 2016.





Inflows to China and Hong Kong via Stock Connect

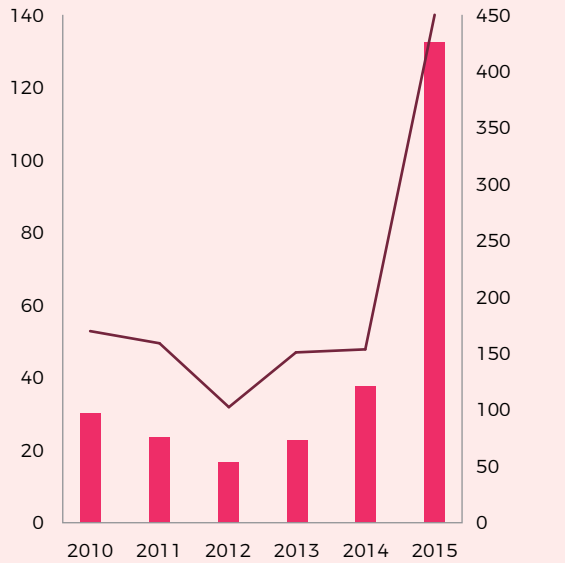
Aggregate quota usage, RMB BN



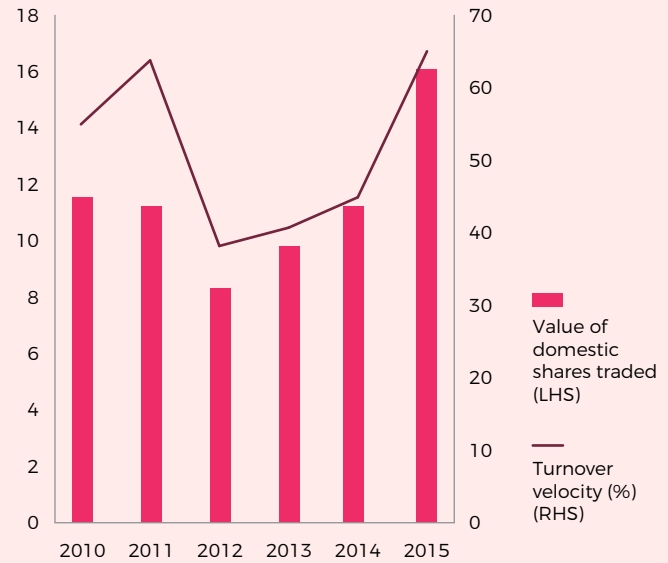
Source: Oliver Wyman analysis, Hong Kong Exchange and Shanghai Exchange public data, WFE statistics database

Impact on liquidity

Shanghai Stock Exchange



Hong Kong Stock Exchange



Source: Oliver Wyman analysis, WFE data

4

INCREASING THE POOL OF SECURITIES AND ASSOCIATED FINANCIAL PRODUCTS

Part of the reason for low investor participation, particularly in early-stage emerging market exchanges, is the relative dearth and/or unattractiveness of available investment opportunities. In early-stage markets the focus is on increasing domestic equity (or debt) issuance. As markets mature, they concentrate on increasing the quality of listings and seek to diversify the range of securities that are available through the market, such as derivatives and ETFs.

INCREASE DOMESTIC ISSUANCE

There are a number of reasons why there are relatively few companies listed in early-stage emerging markets:

- These markets are often dominated by family-owned businesses (where the family is reluctant to allow outside shareholders) and/or state-owned enterprises.
- Companies do not necessarily understand the benefits of raising equity capital.
- The cost (both direct and indirect) of equity capital may be higher than other forms of financing.

In order to increase the number of listed companies, exchanges need to actively promote the listings proposition (**issuer education**) both directly and through their intermediary networks. Listings regulators (whether the exchange or an external regulatory body, or both) also need to ensure that public offering and listings standards are commensurate with the level of market development. Overly strict requirements may discourage issuance, while standards that are too lenient may at best result in a lack of transparency for investors, and at worst lead to fraud, market manipulation, and low-quality listings.

What constitutes an **optimal listings and disclosure regime** will change as the market matures. For example, in order to encourage listings in early-stage markets, regulators may allow companies to issue shares with differentiated voting rights, to come to market with lower shareholder spreads, and to comply merely with local accounting standards, rather than with international financial reporting standards. As a company's use of the market increases, regulators adjust listings requirements to promote greater liquidity in the shares (larger shareholder spreads and free-float requirements) and insist on the adoption of best-practice corporate governance standards.

Some markets have opted to strengthen requirements over time as the market has evolved, while others (of which Brazil's Novo Mercado example is probably the most well-known) have implemented a tiered model with access to the higher tiers dependent on compliance with higher corporate governance standards.

CASE STUDY 4: THE CASE OF BRAZIL'S NOVO MERCADO

OVERVIEW

The introduction of a tiered market structure that provided a step ladder for adherence to higher levels of corporate governance.

IMPACTS

- Higher valuations for, and greater investor interest in, Novo Mercado companies.
- Revitalization of the equity market and an increase in the number of companies choosing to list on Novo Mercado.

DETAIL

By the late 1990s, the Brazilian stock market was in trouble. There were only eight IPOs on Brazilian stock exchanges in the period from 1995 to 2000. A considerable number of listed Brazilian companies were delisted or taken private by their controlling shareholders (often due to low prices on the secondary market). Many Brazilian companies listed directly or dual-listed on foreign exchanges (such as NYSE).

The Brazilian market suffered from deficient corporate governance and limited transparency. In addition, the legal regime failed to protect non-controlling shareholders, especially in delisting or change of control transactions. Companies predominantly issued non-voting preferred shares, often ceding control to a group of minority shareholders. Prior to 2001, up to two-thirds of a Brazilian corporation's equity could be non-voting preferred stock, allowing common shareholders holding a small amount of a corporation's total equity to control a corporation. At the same time, a lack of transparency increased the risk of fraud and the perception of high risk. Previous legislative efforts in the late 1990s had failed to address these issues successfully.

Brazilian equity markets – overview of reformed market structure

Requirements	Description	Traditional	New market segments		
			Level 1	Level 2	Novo Mercado
Improved disclosure	<ul style="list-style-type: none"> • Quarterly financials, incl. cash flows and consolidated statements, reviewed by an independent auditor • Disclosure of insiders' and controlling shareholders' transactions • Significant transactions reporting • Internationally recognized reporting standard (IFRS or US GAAP) – applying to Novo Mercado listings only 	✗	✓	✓	✓
Corporate governance and shareholder rights	<ul style="list-style-type: none"> • Tag-along rights for all shareholders (at the full price of the deal – Novo Mercado, or no less than 80 percent of the price – Level 2) • Board of directors must have at least five members, all with mandates of up to two years, with re-election allowed • At least 20 percent of Board members must be independent • At least 25 percent free float • Corporate issues arbitrated via dedicated Arbitration Panel 	✗	✗	✓	✓
Only voting shares allowed	<ul style="list-style-type: none"> • Shareholders of Level 2 participants entitled to voting rights in some key situations (e.g. M&A) • Novo Mercado participants can only issue voting shares (i.e. no non-voting preferred shares allowed) 	✗	✗	○	✓





As a result, the stock exchange introduced a series of initiatives aimed at improving the corporate governance and transparency of listed companies, thereby raising investor confidence and interest. In addition to the traditional market, the exchange established three new market segments with progressively stricter listing requirements. Novo Mercado was the new gold standard, requiring the highest degree of corporate governance and disclosure, similar to those in Western markets. The two lower tiers were designed as stepping stones for existing issuers, in order to ease their transition to the new requirements of Novo Mercado. The new system was launched in 2000. The new market segments soon dominated the equity sector, while liquidity improved.

Regulators in early-stage markets may also, given relatively lower levels of investor sophistication, adopt a **merit-based regime, rather than a disclosure-based regime**, for listing. Under a merit-based regime, the regulator seeks to protect investors from abuse and ensure that securities are offered to them at a fair price by making a significant intervention in the offering process. As the market matures, regulators shift towards a more market-oriented disclosure-based regime where the issuer is required to make full disclosure of its affairs to the investor. It is then up to investors to take responsibility for their investment decisions. In practice, we note there is not always a clear-cut distinction between merit-based approaches and disclosure-based approaches, and jurisdictions can incrementally transition between the two over a period of time as the market matures.

Exhibit 4: Merit-based vs. disclosure-based regulatory regimes

	Merit based approach	Disclosure based approach
Role of the Regulator	<ul style="list-style-type: none"> Plays a significant role in protecting investors by evaluating the safety of potential issuers High level of disclosure and diligence for issuers More demanding on regulator's resources 	<ul style="list-style-type: none"> More limited role with focus on ensuring correct information is disclosed to the market Lower demands on the regulator, given more limited role in the issuance process
Ownership of risk	<ul style="list-style-type: none"> Risk lies with the regulator Misevaluating the safety of an issuer causes significant loss of credibility 	<ul style="list-style-type: none"> Risk lies more with investors However, this system is present in more developed markets, so investors can diversify away large amounts of risk
Impact on investors	<ul style="list-style-type: none"> Arguably an inefficient system: limits investor choice Some investors willing to accept high-risk assets in return for suitable yield, but not given this opportunity 	<ul style="list-style-type: none"> Very few, if any securities are blocked from the market providing increased investment options
Use of approach	<ul style="list-style-type: none"> Well suited to markets with low volumes and information transparency, and where many investors lack the skill to make informed investment decisions 	<ul style="list-style-type: none"> More economically efficient system, so long as investors are capable of making informed decisions and channels exist for them to access information
Sample countries	Uganda, Tanzania, Kenya, Oman	Europe, Malaysia, Thailand, USA

Source: Oliver Wyman analysis, academic literature

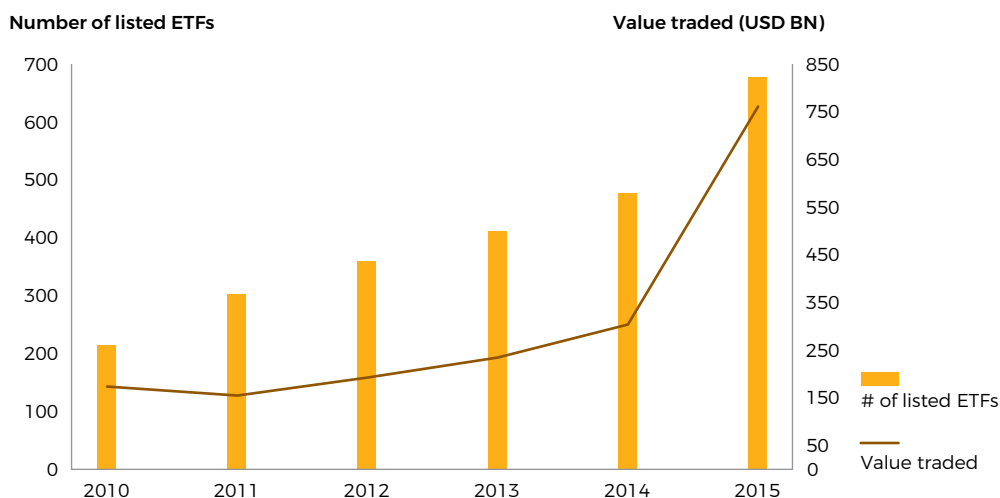
INTRODUCING EXCHANGE-TRADED FUNDS

Mid-stage and mature emerging markets look to broaden the range of listed products on the market, thereby enhancing the attractiveness of the market for existing investors and potentially attracting new investors. An increasing number of emerging market exchanges have introduced **ETFs**, with the number listed on emerging market exchanges growing from just over 200 in 2010 to nearly 700 in 2015 (Exhibit 5: Number of ETFs and value traded (2010-2015) on selected emerging market exchanges).

Successfully introducing ETFs requires:

- Appropriate enabling legislative and regulatory framework that includes dedicated listings requirements and permits investors to invest in ETFs.
- Existence of issuers and entities willing to act as market makers.
- Level of underlying market liquidity. In markets where the local equity market index is insufficiently liquid to enable the construction of an ETF, the exchange could begin by listing an international ETF to familiarize investors, market participants, and regulators with the product.
- Extensive education of investors and market intermediaries about the product and its benefits.

Exhibit 5: Number of ETFs and value traded (2010-2015) on selected emerging market exchanges⁷



Source: WFE data

⁷ BM&FBOVESPA, Bolsa de Comercio de Santiago, Bolsa de Valores de Colombia, Bolsa de Valores de Lima, Bolsa Mexicana de Valores, BSE India Limited, Bursa Malaysia, Hanoi Stock Exchange, Indonesia Stock Exchange, National Stock Exchange of India, Shanghai Stock Exchange, Shenzhen Stock Exchange, Stock Exchange of Thailand, Taiwan Stock Exchange Corp., Athens Stock Exchange, Borsa Istanbul, Budapest Stock Exchange, Johannesburg Stock Exchange, Ljubljana Stock Exchange, Nigerian Stock Exchange, Saudi Stock Exchange (Tadawul), Tehran Stock Exchange, Warsaw Stock Exchange.

CASE STUDY 5: EFTS IN NIGERIA

OVERVIEW

The exchange began by listing a commodity-based ETF that was already listed in other markets and expanded to include local ETFs over time.

IMPACTS

- Eight ETFs listed since 2011.
- A steady increase in value traded and number of trades.

KEY LESSONS LEARNED

- New products require extensive education and promotion to encourage uptake.
- Costs are an important determinant of usage.

DETAIL

The Nigerian Stock Exchange (NSE) listed its first ETF (a commodity ETF that referenced the gold spot price and was listed on the Johannesburg Stock Exchange) at the end of 2011. While the NewGold ETF had been quite successful in other markets, it did not perform as well as hoped in Nigeria. This was apparently due to relatively little understanding about ETFs as an investment product, little demand for gold exposure (as either an investment or a hedge) in Nigeria, and the relatively high cost of the product. It took more than two years before Vetiva, a local fund manager, listed the first equity ETF, in early 2014. Since then, Vetiva and others have listed a further four equity ETFs, with a sovereign debt ETF to follow during the course of 2016.

To support an enabling environment for ETFs, the exchange:

- Regularly promotes the benefits of ETFs through the media and holds educational workshops and seminars, together with the ETF issuers and market intermediaries;
- Works with the market makers to ensure that they are able to provide the requisite level of secondary market liquidity;
- Engages with market intermediaries, such as custodians, to reduce the total expense ratio of ETFs; and
- Continues to promote the listing of new ETFs.

DEVELOP EXCHANGE-TRADED DERIVATIVES

Another product that more mature emerging markets look to introduce are **exchange-traded derivatives**. After a slowdown post-2011, global exchange-traded derivative volumes picked up again in 2015. An increasing proportion of total derivatives volumes are transacted on emerging market exchanges. For certain contract types, emerging market exchanges even account for the majority of the volumes traded. In 2015, BM&FBOVESPA recorded the highest number of total contracts traded for single stock options; and the Moscow Exchange was first in single stock futures and currency futures. For several years and until fairly recently, the KOSPI 200 index future listed on the Korean exchange was the world's most actively traded index futures product. Emerging markets have also expanded the range of derivatives that they offer.

A well-functioning derivatives market can offer a variety of benefits, including improved liquidity. These benefits result from the interaction between the derivative market and underlying stocks, improved opportunities for hedging and risk transfer, and potentially enhanced price discovery for the underlying assets. However, launching a successful derivatives market requires certain conditions to be met and the right enabling infrastructure to be in place. Some of these are set out below:

- There should be reasonable liquidity in the spot market, with prices that are broadly market driven (rather than set by a central body).
- There should be some economic rationale in the market for the specific derivatives products that are chosen for launch, such as risk transfer and price hedging.
- The regulatory and legal framework must ensure certainty of exchange contracts and delivery, as well as providing insolvency protections.
- In addition to a trading mechanism, the market will require some form of central counterparty infrastructure that provides multilateral netting and ongoing risk management of positions.
- There should be a sufficiently diverse investor base to ensure the use and attractiveness of the products.
- The exchange should secure a commitment from the market to use the products. On this point, careful consideration must be given to contract design and specifications.
- There should be a transparent market microstructure that ensures confidence in the market prices.
- Finally, as with all new product types (although perhaps even more so), the education of regulators, market participants and investors is critical.

CASE STUDY 6: NATIONAL STOCK EXCHANGE OF INDIA DERIVATIVES MARKET

OVERVIEW

The National Stock Exchange of India launched its derivatives market in 2000. By the end of 2015, the National Stock Exchange of India was the largest exchange by number of stock index options traded.

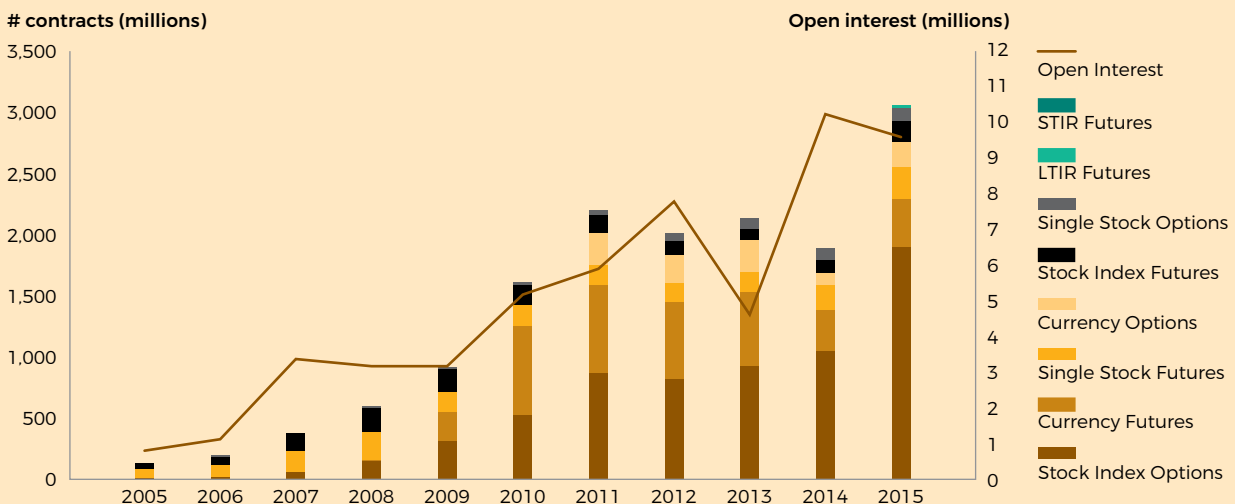
IMPACTS

- Diversified the investor base.
- Contributed to increasing the approximate number of equity market trades from 230 million in 2003 to 1.8 billion in 2015.

DETAIL

Since the launch of its derivatives market in 2000, the National Stock Exchange of India has grown both the volume of activity in the market, as well as the range of products traded. The exchange began by listing equity futures contracts in an attempt to move a reasonably large over-the-counter market into the more regulated – and transparent – on-exchange environment.

NSE India case study: Derivatives – number of contracts



Source: WFE data

Despite launching with stock index futures, the most actively traded contracts on the exchange by the end of 2015 were stock index options and currency futures. The exchange notes that it took nearly four years to build the market, and stresses that market education – not only right at the start, but with every new product launched – is critical to the success of the market. The exchange also points out, however, that the market will adopt new products more rapidly as it becomes familiar with derivative products more generally. For example, it took only eight months for currency derivatives volumes to trade at levels that equity derivatives took four years to reach.

The exchange believes that the introduction of derivatives products has had a positive impact on liquidity because it has brought new participants into the market and has placed the exchange in a positive light with international investors.

CREATING A REGIONAL MARKETPLACE

Another mechanism which smaller mid-stage and mature emerging markets use to grow both their investor and their issuer base is to link with other markets to **create a regional market**. This involves harmonizing regulatory standards across the participating countries, facilitating cross-border issuance and investment, and establishing technical links between the markets. Recent examples include the ASEAN initiative and the Latin American Integrated Market (MILA). Despite the theoretical logic underpinning these initiatives, realizing the benefit has proved challenging, and in many cases they have as yet not lived up to their full potential. This is at least partly because of the difficulty of achieving meaningful integration. The MILA case study highlights specific implementation challenges.

CASE STUDY 7: LATIN AMERICAN INTEGRATED MARKET (MILA)

OVERVIEW

Regional integration of Latin American markets to create a regional powerhouse.

IMPACTS

- Limited impact to date.

KEY LESSONS LEARNED

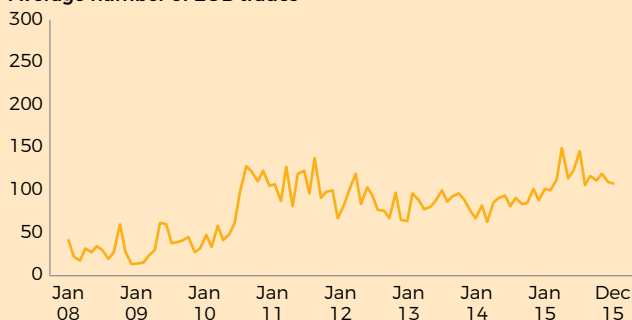
- Realization of benefits may depend on full harmonization and integration.

DETAIL

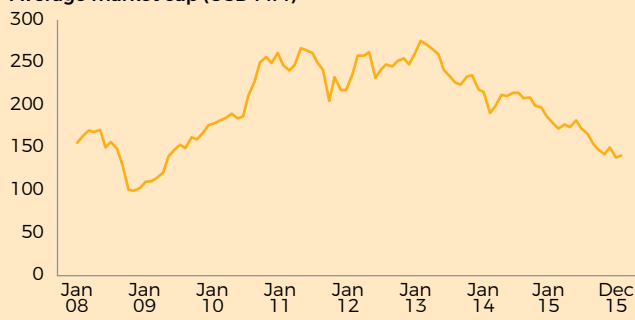
The Latin American Integrated Market (MILA) aims to integrate the capital markets of Chile, Colombia, Mexico, and Peru. Since 2009, the market actors in these countries have worked to harmonize the national regulations in order to simplify trading and post-trade infrastructure. The market was formally launched in 2011, with the involvement of Chile, Colombia, and Peru. The focus was on facilitating the buying and selling of securities across its participating exchanges through a local broker. Mexico's BMV joined the initiative in 2014. While the individual MILA markets are relatively small (with the exception of Mexico), their combination makes them the largest market in Latin America by market capitalization and the number of listed companies, and the second-largest market after Brazil in terms of value traded. The MILA countries are in the process of linking their derivatives and debt markets, allowing the governments to offer debt to investors in the four countries simultaneously.

MILA

Average number of EOB trades



Average market cap (USD MM)



Source: WFE data

However, removing the legal and operational barriers to investment from within and outside the region has been a gradual process. As a result, the increase in cross-border trading from this initiative has been slower than expected. Participants are therefore focused on addressing the current impediments to further integration, namely: a lack of harmonization of tax laws; regulatory constraints on the regional and cross-border participation of institutional investors; a lack of a harmonized regulatory framework for mutual funds (i.e. a regional passport); the trading model (such as order routing through local brokers, as opposed to direct (remote) access for regional participants); and a lack of a common framework for clearing, settlement, and operational procedures (i.e. insufficient integration and interoperability of post-trade arrangements).

5

INVESTING IN THE CREATION OF AN ENABLING MARKET ENVIRONMENT

The presence of a diverse, active investor base and a large pool of securities and associated financial products markets are necessary, but in themselves insufficient for ensuring market liquidity. Markets also invest in creating an enabling environment through addressing trade and post-trade inefficiencies and reducing transaction and settlement costs.

Early-stage markets focus on developing a simple but efficient electronic market, automating processes where possible, and providing a basic level of market data. As markets mature, their focus shifts toward enhancements that attract new types of investors, such as providing indices or launching market-making incentive schemes. Finally, mature emerging markets may look to offer low latency services, sophisticated data offerings, and introduce securities lending and borrowing schemes.

IMPROVING ELECTRONIC TRADING TECHNOLOGY

Technology has long since underpinned the rapid and smooth operation of markets. As markets evolve and mature, they continue to invest in technology to provide new innovations and services. Such investment not only attracts investors but also encourages a greater volume of trading. The broad range of options available to markets entails a spectrum of technological enhancements, with markets focusing on different options as they mature.

Very early-stage markets tend to focus on the **electronification** of the actual market and the **dematerialization** of the associated processes. Although most markets have some electronic platform, many still employ some element of manual order execution (such as open outcry), as well as manual paper-based processes, which are ripe for digitisation. Such improvements can significantly reduce execution costs, transaction speed, and market transparency.

With a fully electronic market in place and smoothly functioning and automated supporting processes, markets focus on more advanced technological enhancements. **Execution algorithms** are a common addition to markets, helping investors to improve the execution and management of their orders without adversely affecting market prices. Often associated with this development is the introduction of additional connectivity options such as **direct market access** (DMA), designed to simplify connectivity for investors, remove unnecessary intermediaries, and ultimately allow those investors greater control of their order flow.

Exhibit 6: Evolution and impact of electronic trading technologies

Electronic trading innovation pyramid

	Development	Typical use in Emerging Markets			Liquidity
		Early	Mid-stage	Maturing	
ATSS	Alternative trading systems <ul style="list-style-type: none"> • Crossing systems • Proprietary trading systems • Dark pools 			✓	High Low
DMA / DSA	Direct market / strategy access <ul style="list-style-type: none"> • Direct Market Access – direct access to order books • Direct Strategy Access – direct access to algorithms 		✓	✓	
Execution algorithms	Basic execution algorithms <ul style="list-style-type: none"> • Volume-Weighted Average Price (VWAP) • Time-Weighted Average Price (TWAP) • Implementation Shortfall (IS) 		✓	✓	
Advanced connectivity	Advanced connectivity <ul style="list-style-type: none"> • Smart order routing • Multiple venues • Co-location 		✓	✓	
Electronic order books / networks	Electronic order books / networks <ul style="list-style-type: none"> • Shift from open-outcry / manual execution to electronic trading and order processing 	✓	✓	✓	

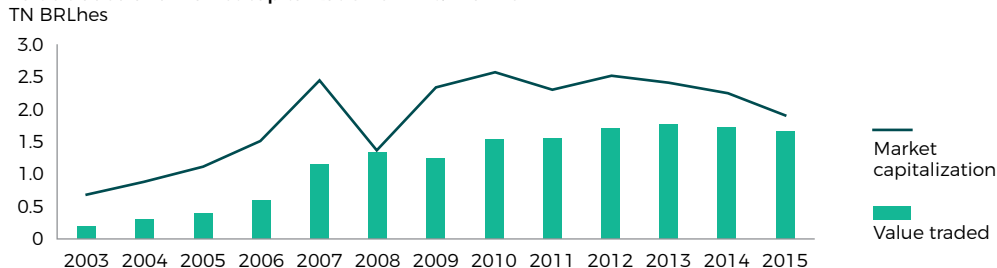
The most mature emerging market exchanges have sought to emulate developed markets by introducing **co-location services** and **support for algorithmic trading firms**. While algorithmic trading arguably enhances liquidity, the increase in algorithmic trading may also pose certain challenges for markets. These include concentration effects (where liquidity is increasingly concentrated in larger, more liquid stocks), impacts on the depth of the order book (where it becomes more difficult for larger orders to be executed without a price impact), and potential stability impacts deriving from high message traffic and algorithm errors.

The impact of the shift to electronic trading on liquidity has been well documented. Several examples help to illustrate its significance.

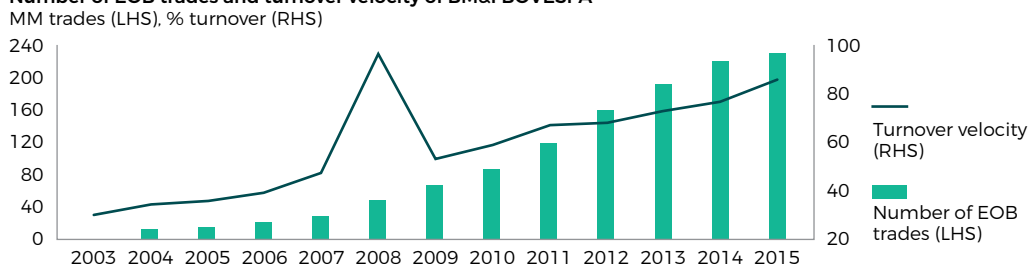
- **Brazil.** Since 2005, trading on BM&FBOVESPA has been conducted exclusively through the electronic market. Floor trading was completely eliminated, allowing greater scale and speed of order execution. In 2013, BM&FBOVESPA introduced a new high-speed trading platform for cash equities, featuring a trading roundtrip time of less than one millisecond. By comparison, the average latency of the equities trading system in 2007 was 450 milliseconds. As a result, the market has seen an exponential increase in the number of trades and lower volatility in asset prices.

Exhibit 7: The impact of BM&FBOVESPA's high-speed trading platform

Value traded and market capitalization of BM&FBOVESPA



Number of EOB trades and turnover velocity of BM&FBOVESPA

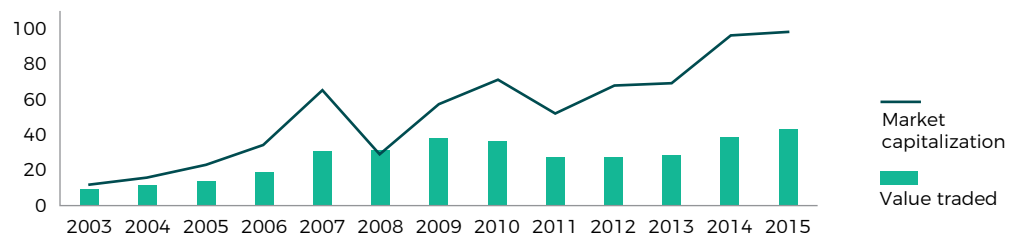


Source: Oliver Wyman analysis, WFE data

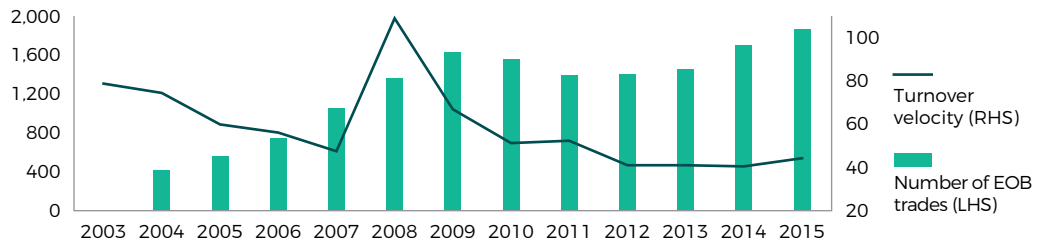
- **India.** The National Stock Exchange of India has invested heavily in trading technologies supported by the local regulator. The Securities and Exchange Board of India (SEBI) allowed algorithmic trading in 2003/04 and direct market access in 2008. In 2011, smart order routing was introduced. Electronic trades and value of trading have grown considerably on the NSE.

Exhibit 8: The impact of trading technology enhancement at the NSE

Value traded and market capitalization of NSE
BN INR



Number of EOB trades and turnover velocity of NSE
MM trades (LHS), % turnover (RHS)



Source: Oliver Wyman analysis, WFE data

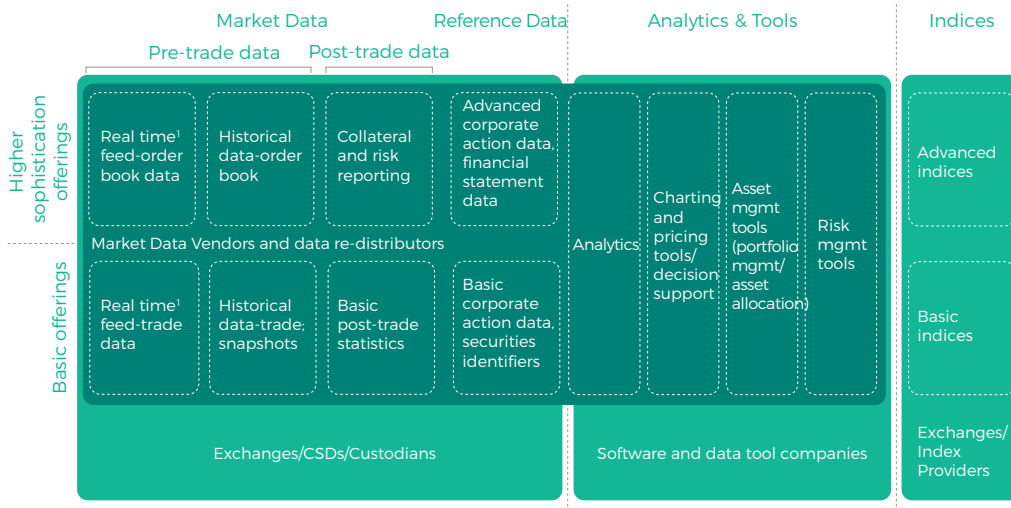
ENHANCING REFERENCE AND MARKET DATA

Data accuracy, data integrity, and data availability are central to enabling investor participation in markets. Just as the investor composition of a market evolves, so must the market's data offering. The value of data to the market comes from providing investors with the confidence to make informed investment decisions, thus enhancing trading activity and liquidity.

As a starting point, markets focus not on commercializing data, but on ensuring the **accuracy and availability of the data**. This would include market data (both pre-trade and post-trade) and reference data (information about listed instruments, corporate action data, and so on). As markets become more advanced, they typically look to introduce more sophisticated market data and reference data offerings, and facilitate the introduction of **analytics and tools**, as well as **indices**, although indices are often developed in collaboration with internationally recognized index providers.

Exhibit 9: Components of a market data offering

Components of data offering



1. Includes delayed data

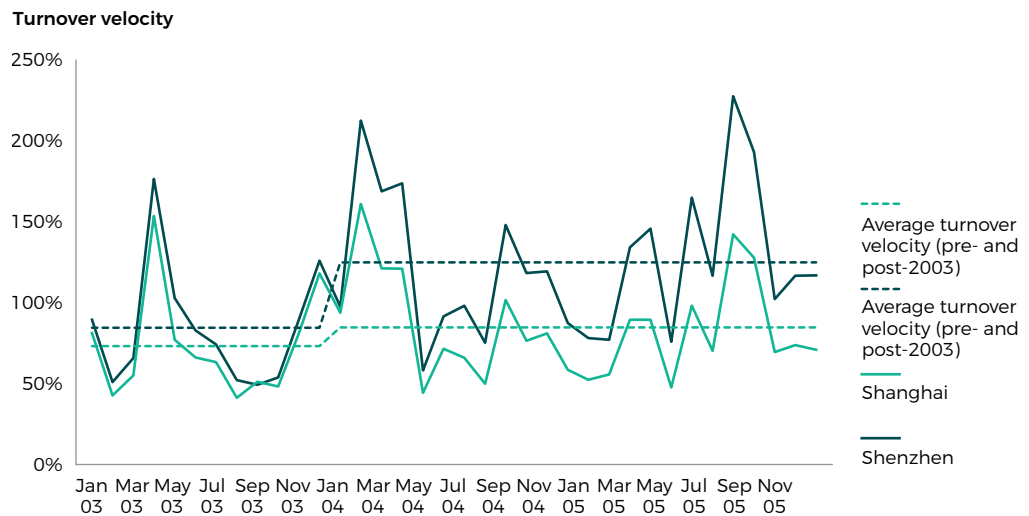
Source: Oliver Wyman analysis

The development of NYSE OpenBook illustrates the impact of market data on liquidity. The introduction in January 2002 of pre-trade transparency of the limit-order book via NYSE's OpenBook service allowed traders to observe order book depth in real time at each price level across all traded securities. Investors were then able to refine their inference about the value of the securities and to plan the execution of trading strategies to minimize transaction costs⁸. The impacts were broad: depth in the order book increased; smaller effective spreads of trades and smaller limit orders were observed; there was a noticeable improvement in the market's informational efficiency; displayed liquidity in the book increased; and there was a decline in the price impact of trades and marketable orders.

China provides an emerging market example of the liquidity-enhancing effects of greater data transparency. In December 2003, the Chinese exchanges of Shenzhen and Shanghai increased the information content of their limit-order book from the three best quotes to the five best quotes for each security. This correlated with a non-negligible increase in turnover velocity in both markets between 2004-05.

⁸ Boehmer et al. conduct a detailed study of the impact of NYSE OpenBook on NYSE's liquidity and price discovery.

Exhibit 10: Turnover velocity in Shenzhen and Shanghai



Source: WFE data

IMPLEMENTING MARKET-MAKING/ INCENTIVE SCHEMES

Market-making or incentive schemes seek to bolster liquidity as nominated members place orders on both sides of the bid/ask spread, enabling other investors the opportunity to execute whenever they wish. Studies of exchanges that have introduced market-making schemes point to a greater liquidity improvement for lower trading and less liquid stocks. These schemes are now commonplace in most developed market exchanges. They are also rapidly increasing in popularity in a number of emerging market exchanges as they seek to attract more international investors.

Market makers play several important roles within markets, increasing the information flow, narrowing bid/ask spreads, and helping to ensure an orderly market. Market makers are bound by specific requirements defined by the venue operator and/or regulator. In exchange for meeting these requirements, market makers are usually compensated via the returns offered through the bid-ask spread or via specific incentives such as fee rebates.

Traditional market-making schemes⁹ come in three types, depending on the required roles and incentives for market makers and market design characteristics:

- **Centralized market making in an order-driven market (floor-based or electronic):** Here a single market maker exists in any given security, having monopolistic rights. The market maker only provides liquidity during

⁹ Not including more sophisticated models, such as arbitrage market making or high frequency trading.

supply and demand mismatches. NYSE and Deutsche Borse operate such schemes. Although these schemes do lower transaction costs and aid in the facilitation of block trades, they are seen as less transparent due to their monopolistic nature.

- **Non-centralized market making in an order-driven electronic market:** This is similar to the centralized system, except with multiple market makers for any particular security, enabling competition for order flow. Euronext and Borsa Italiana have implemented such schemes, providing fairer competition and ensuing benefits for other investors.
- **Market making in a quote-driven electronic market:** In this instance, dealers provide quotes, often on a continuous basis, enabling buying and selling by investors and thus creating markets for the security. Market makers serve as intermediaries between investors, obtain better prices on trades, and guarantee order execution. For example, Nasdaq and the London Stock Exchange have such schemes.

Several emerging markets have implemented market-maker schemes with mixed success. For example, the Nigerian Stock Exchange introduced market makers in 2012 but has since experienced high levels of volatility; Abu Dhabi Securities Exchange introduced a single market maker but liquidity remained weak given the high level of retail participation (~60 percent); the Singapore Exchange introduced traditional market makers in 2014 and had record low levels of volatility; and BM&FBOVESPA has a successful model where issuers can hire a market maker.

It is agreed that markets require a certain level of innate liquidity and low volatility to see any benefit from market-maker schemes. In addition, if requirements for the scheme are too lenient, then impact will be limited; for example, if market maker orders are too often far away from the bid/ask spread or if the requirements do not specify a minimum activity level, it can result in market making becoming a voluntary activity.

INTRODUCTION OF SHORT-SELLING AND SECURITIES BORROWING AND LENDING

While short-selling enjoyed some notoriety during the 2008 financial crisis, the ability to engage in short-selling is generally regarded as contributing positively to price discovery, increasing market liquidity, and facilitating risk management, although the practice remains prohibited in many jurisdictions.

Securities lending and borrowing (SLB) is an important enabler for the successful introduction of short-selling, as well as market-making programs, the introduction of products such as equity derivatives, and exchange-traded funds. As markets mature and as they seek to attract international investors, they look to gradually enable short-selling and/or securities lending and borrowing.

As mentioned, SLB is an important enabler for many liquidity-enhancing mechanisms discussed in this report. That said, for markets looking to implement SLB, the emphasis must be on creating a well managed and safe SLB environment. There are several risks associated with SLB that may have systemic implications. These include counterparty credit risk, operational risk, collateral risk, settlement risk, and market risk. There is no one-size-fits-all approach to implementing SLB, but the following broad principles apply:

- Introduce SLB gradually, beginning with only a few of the most liquid counters. Restrict participants in SLB to regulated entities.
- Understand what, if any, legislative or regulatory changes may need to be made, e.g. allowing pension funds to engage in SLB and necessary insolvency protections.
- Require the use of internationally-aligned Master Agreements (GMSLA) adapted for the local market and approved by the securities market regulator.
- Give careful consideration to what would constitute suitable collateral for SLB transactions. Initially, it may be best to limit this to cash.
- Either impose regulatory restrictions on the ability to rehypothecate collateral, or ensure that what is acceptable with regard to rehypothecation is clearly articulated in the master agreement.
- Conduct extensive market education, not just of the relevant market participants, but also of market regulators.
- Limit the potential for market manipulation by introducing position limits (at least, initially), require the flagging of short sales to the relevant entities (the exchange, the CSD, and the regulator), and mandate the reporting of securities loans.

Several emerging markets have already or are in the process of implementing frameworks for SLB and short-selling. The details vary, depending on specific policy and regulatory concerns and stage of market development. Kuwait introduced rules in 2005 to allow short-selling in conjunction with allowing the trading of derivatives. In 2012, the UAE's Securities and Commodities Authority (SCA) issued rules to authorize both stock lending and short-selling, but restricted their adoption by limiting the ability to short-sell to licensed market makers. South Africa, India, and Turkey all enable SLB and short-selling, while Morocco is in the process of implementing an SLB framework.

6 SUMMARY

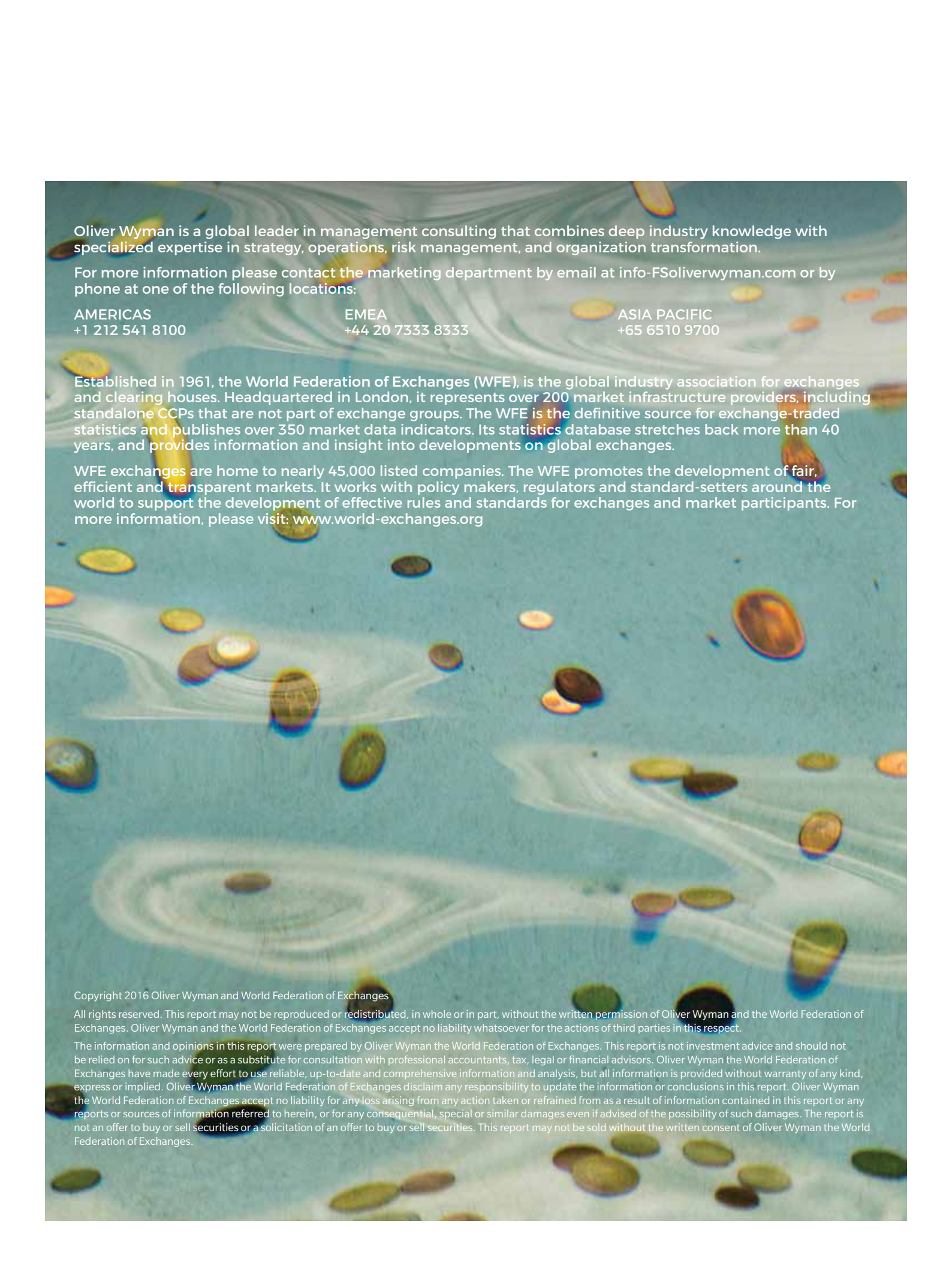
This report has described many of the levers which venue operators and national regulators can use to grow liquidity on their markets. However, it is important to note there is no ‘one-size-fits-all’ solution. The effectiveness of any one lever will depend both on the dynamics of the particular market and on how well it is implemented. What worked in one country may not work in another.

The table below provides a high-level comparison of the different levers, including their relative impact, the level of market sophistication required, and the key success factors observed in peer markets.

CATEGORY	POSSIBLE LEVERS	EARLY	MID-STAGE	MATURING	KEY SUCCESS FACTORS	
PROMOTING THE DEVELOPMENT OF A DIVERSE INVESTOR BASE	Grow retail investor base	✓	✓	✓	<ul style="list-style-type: none"> • Requires support from multiple bodies to ensure success 	
	Tax incentives	✓	✓	✓	<ul style="list-style-type: none"> • Government buy-in 	
	Investor education	✓	✓		<ul style="list-style-type: none"> • Multi-faceted approach • Public commitment to support financial literacy • Investor roadshows 	
	Investor protection schemes	✓	✓		<ul style="list-style-type: none"> • Government buy-in • Regulatory framework 	
	Professional and regulated intermediaries		✓	✓	<ul style="list-style-type: none"> • Trusted professional certification • Public faith in financial institutions 	
	Simplified market access		✓	✓	<ul style="list-style-type: none"> • Technology investment • Relatively high connectivity 	
	Incentivize local institutional investors	✓	✓		<ul style="list-style-type: none"> • Public trust in local securities • Regulatory backing 	
	Remove regulatory barriers	✓	✓		<ul style="list-style-type: none"> • Regulatory backing • Government support 	
	Tax incentives	✓	✓			
	Attracting international investors			✓	✓	<ul style="list-style-type: none"> • Appetite from local regulator/policymakers • Attractive offering to peer markets • Strong local economic tailwinds
	Market liberalization			✓	✓	<ul style="list-style-type: none"> • Government buy-in • Strong relationship with local regulators
	Tax incentives			✓	✓	<ul style="list-style-type: none"> • Government support
	Build links to developed markets				✓	<ul style="list-style-type: none"> • Investment proposition for target market • Investment capital
INCREASING THE POOL OF SECURITIES AND ASSOCIATED FINANCIAL PRODUCTS	Optimize market admission requirements	✓	✓	✓	<ul style="list-style-type: none"> • Strong regulatory relationship 	
	Promote the listings value proposition	✓	✓	✓	<ul style="list-style-type: none"> • Available resources to engage in business development 	
	Specify appropriate admission criteria	✓			<ul style="list-style-type: none"> • Regulatory support • Issuer engagement 	
	Move to disclosure based approach		✓			
	Align with international standards				✓	
	Launch ETFs			✓		<ul style="list-style-type: none"> • Market education • Aligning products with market need
	Launch derivatives				✓	<ul style="list-style-type: none"> • Market education • Aligning products with market need
	Create regional marketplace				✓	<ul style="list-style-type: none"> • Strong regional collaboration • Pre-existing economic linkages • Regulatory buy-in

CATEGORY	POSSIBLE LEVERS	EARLY	MID-STAGE	MATURING	KEY SUCCESS FACTORS	
INVESTING IN THE CREATION OF AN ENABLING MARKET ENVIRONMENT	Improving market trading technology	✓			<ul style="list-style-type: none"> • Investment • Ability to build or buy technical expertise • Potential partnership with third party providers 	
	Electronification	✓				
	Dematerialization	✓				
	Direct market access		✓	✓		
	Algorithmic execution		✓	✓		
	Co-location services			✓		
	Support for algorithmic trading firms			✓		
	Enhanced market and reference data	✓	✓	✓	<ul style="list-style-type: none"> • Data expertise • Investor demand • Potential partnership with third party providers 	
	Improved real-time and historical data	✓				
	Analytics and tools		✓	✓		
	Index capabilities		✓	✓		
	Implement market-maker schemes			✓		<ul style="list-style-type: none"> • Understanding of market dynamics and client base • Research and impact modelling
	Implement short-selling and securities lending and borrowing				✓	
						<ul style="list-style-type: none"> • Enabling regulatory framework • Market education • Staggered approach to implementation

This report does not purport to be exhaustive, and every lever covered in this report undoubtedly justifies its own much more detailed report. What this report attempts to do is provide regulators and exchange operators in emerging markets with some ideas about how to enhance market liquidity, and a framework for thinking about what levers may work best at what stage of market development. Exchanges do not operate in a vacuum and the ability of the exchange to contribute to the attainment of the broader economic outcomes set out at the start of this report depends to a large extent on the exchange's operating environment and market conditions. Consequently, exchanges, regulators, and policymakers need to work closely together to create the requisite enabling market environment.



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