

Well-developed Energy Exchange; A Pathway to an Economic Boom

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Abstract

Energy exchange development is an integral part of economic development. The fact that extended provision and use of energy services is firmly associated with economic development leaves open how significant energy is as a causal factor in economic development, however; and on the other side energy sector development competes with other opportunities for scarce capital and opportunities for policy and institutional reform. In this paper we first give a brief conceptual introduction that seeks to depict the structure of the paper into three sections. We then show the importance of a well-functioning energy exchange as a key on the way of economic development. Next, we describe the most important pre-conditions for a well-developed energy exchange. Finally, we suggest some solutions that can accelerate the development process. The evidence shows regulations as the most important factor and government as the best supportive body in the development process.

Keywords: Energy exchange, Development, Economic growth.

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Introduction

The definition of development is both heavily contested and conceptually challenging. It is not within the scope of this paper to provide a full or adequate account of this matter. While definitions vary widely, development approaches typically pursue some mixture of two broad goals, namely poverty reduction and economic growth. The aim of this study

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is to identify, analyse and assess the impacts made by energy exchanges in developing countries on development, poverty reduction and economic growth.

In today's environment, accelerating the development of domestic capital markets, particularly for financing from local resources, is more crucial than ever. Global financial reforms have transformed banks' willingness and ability to lend. Recent events have highlighted the limitations of relying heavily on foreign investments alone and the potential repercussions of borrowing significantly in non-local currencies (Wyman, 2015).

It is reasonable to assume that an energy exchange generating high volumes of trade will in some way deliver tangible benefit to its stakeholders. After all, energy exchanges impose additional costs on participants, such as membership fees, transaction fees and compliance costs. Commercial entities will not pay unless they receive a more-than-commensurate reward for their participation. But what are the kinds of benefits that energy exchanges deliver? Who gains and who loses? How, specifically, have these institutions functioned in developing countries? Has there been a notable development impact?

Our main goal is that to demonstrate how well-developed energy exchanges generate various economic benefits, including higher productivity growth, more employment opportunities, and improved macroeconomic stability and performance. To focus on these major benefits more exactly and in order to find suitable answers for the above-mentioned questions, this paper is divided into three sections:

Energy exchange landscape; represents a contextual overview of the markets, and the key stakeholders and constituents that compose these markets. The section concludes with an examination of the valuable role that energy exchanges play in the financial system and the broader economy, specifically in: supporting private sector and economic growth, encouraging domestic long-term and diversified investments, diversifying sources of credit and associated risk, and promoting greater market discipline and transparency. Understanding the important role of energy exchange in supporting financial sector and economic growth can help policy-makers excel at prioritizing their development against other issues.

Evaluating energy exchanges development; outlines the key elements and challenges impacting issuer and investor participation in emerging energy exchanges and, hence, their growth. These include: accessibility to the market, perceived risk of the market framework, relative cost and returns from participating in the market, and capacity to effectively match supply and demand. Put differently, herein we discuss the necessity of some preconditions for the development of well-functioning energy exchanges.

With this as context, the paper proposes a structure for assessing market advancement utilizing metrics connected with each of these four components. Effective market-development policy activities ought to decidedly affect these variables and, thus, related metrics should improve as the market develops.

Accelerating energy exchanges development; in this section, we highlight the impact

of energy exchange development on the economic performance. Lessons from the experience of other countries with well-functioning energy exchanges are used at the paper's core to represent a practical set of recommendations for policy-makers and regulators to consider as they navigate the energy exchanges development process. Herein we also draw insights from multi-stakeholder ideas and secondary research to propose activities for quickening the development of a nation's energy exchange. The proposals are intended for emerging and frontier market economies where capital markets have remained significantly immature in respect to their present size and future capability of their economies. Given that the topic of capital markets is broad, this paper focuses on the development of energy exchanges, a critical enabler of economic growth and stability in the financial system, but an area of capital markets that is relatively less understood and developed among emerging economies. Lastly, the paper is proposed just as a beginning stage for productive discussions and partnerships between policy-makers and market participants. While the suggestions are basically planned for emerging country policy-makers, they also highlight open doors for market participants (e.g. banks, investors, infrastructure and data providers) to play a supportive role in this development process. We hope that emerging markets will find the practical suggestions profitable as they navigate the challenging process of developing the robust capital markets required to support continued private-sector and economic growth.

While the paper tries to address the many opportunities that are applicable across emerging countries, it is also important to realize that each country is different, with varying structural constraints, financial development histories and political backgrounds. Therefore, the suggestions will not apply equally across all countries.

It is also of great significance to emphasize that the successful implementation of these suggestions needs strong government sponsorship of and commitment to the development process – a significant function against a backdrop of many other important issues. As such, policy-makers ought to carefully consider their country's context to decide whether energy exchange development is an objective they would like to champion and, if so, the suitable actions to pursue and their prioritization.

The importance of energy exchanges

An Energy exchange is a market in which multiple buyers and sellers trade commodity and commodity-linked contracts on the basis of rules, regulations and procedures enacted by the exchange. In developed countries, and in the vast majority of developing countries, such exchanges typically work as a platform for trade in futures contracts, or for other standardized contracts for future delivery. In rest of the developing world, an energy exchange may act in a broader range of ways, in order to stimulate trade in the energy sector. This may be through the use of instruments other than futures, such as the cash or "spot" trade for immediate delivery, forward contracts on the basis of warehouse receipts, or the trade of repurchase agreements for financing (known as "repos") (Chevallier and Ielpo, 2013).

As has been discussed, the usefulness of an energy exchange lies in its institutional potential to remove or lessen the high transaction costs often faced by entities along commodity supply chains in developing countries. An energy exchange decreases

transaction costs by offering services at lower cost than that which participants in the energy sectors would pay if they were acting outside an institutional framework. These can include –but are not limited to– the costs related to finding a suitable buyer or seller, negotiating the contractual terms and conditions, securing finance to fund the transaction, managing credit, cash and product transfers, and arbitrating disputes between contractual counterparties. Therefore, by reducing the costs that must be paid by the parties to a potential transaction, an energy exchange can stimulate trade.

Furthermore, well-functioning energy exchanges can promote more efficient production, storage, marketing, and overall energy sector performance. It is incisively because of these benefits that transition and developing economies with large energy sectors have embraced energy exchanges in recent years (REJNUŠ, 2006).

Specifically, an energy exchange can perform one or more of a range of potential functions – exactly which functions will depend on the nature of the exchange and the local context in which it operates. For exchanges that offer spot trades, the institutional function is to facilitate trade – bringing together buyers and sellers of energy-related commodities, and then imposing a framework of rules that provides the confidence to transact. Robust procedures for overseeing these transactions can also trigger improvements in the efficiency and infrastructure of energy cash markets – for example, through the upgrading of exchange-accredited warehousing and logistics infrastructure, the acceptance among market participants of exchange-defined product quality specifications, and the reduction of default levels, through intermediation by the exchange in the processing (or “clearing”) and settling of contracts.

Energy exchanges offering trade in instruments such as forwards and futures contracts also provide sector participants with a means of managing exposure to energy-price volatility. This is important, as world energy prices are often highly volatile over short time periods – sometimes fluctuating by over 50 per cent within a year. These “hedging” instruments can bring producers greater certainty over the planting cycle, while enabling processors, traders and purchasers to lock in a margin that can secure them a positive return.

Finally, where spot, forwards and futures transactions take place on an energy exchange, the price information that result from this trade – the so-called “price discovery” mechanism – also performs a vital economic function. As exchange prices come to reflect the information known about the market, they provide an accurate reflection of the actual supply/demand situation. This provides important signals that market participants can use to make informed production, purchasing and investment decisions. Furthermore, the availability of a neutral and authoritative price reference can overcome information asymmetries that have often disadvantaged smaller or less well-connected sector participants in the past.

Figure 1 summarizes the benefits of energy exchanges.

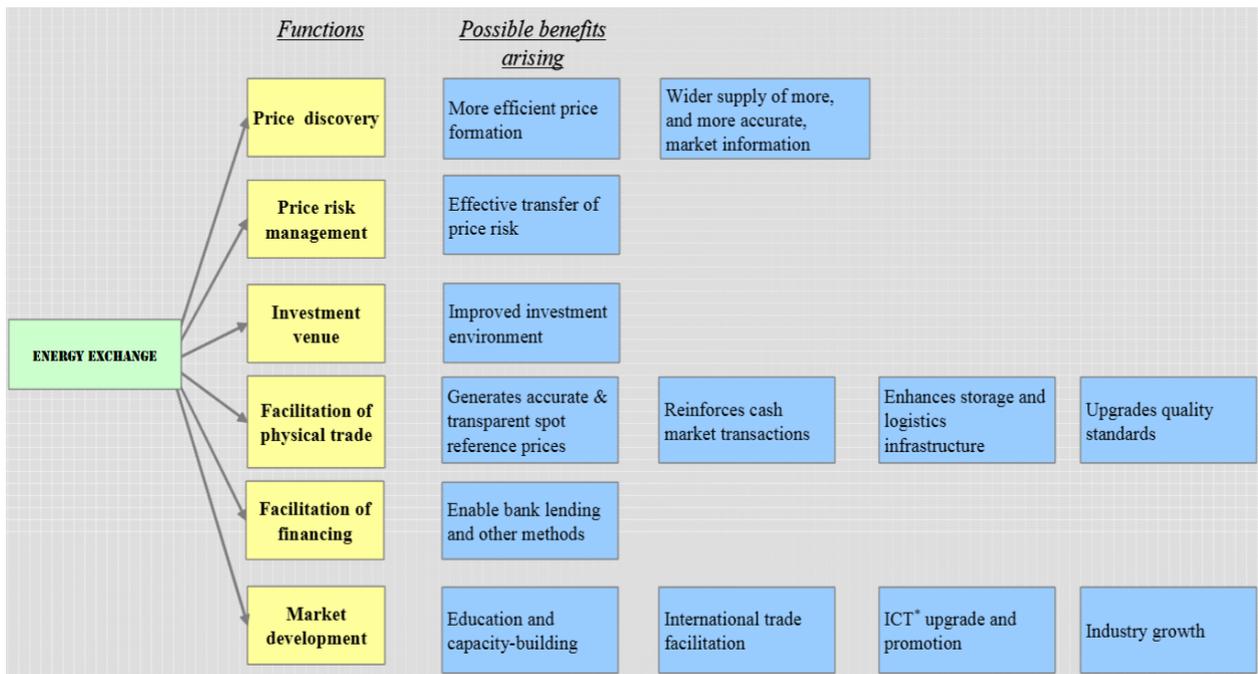


Figure 1: expected benefits from well-developed energy exchanges (United Nations, 2009).

Price discovery

Price discovery refers to the mechanism through which prices come to reflect known information about the market. The price level established on the market can therefore represent an accurate depiction of the prevailing supply/demand situation in the underlying energy markets, whether in the spot market for current deliveries or in the forwards/futures markets for deliveries at specified future occasions. The benefits of price discovery can be categorized as those arising from a more efficient price formation process, and those arising from the wider supply of more – and more accurate – market information. The first group refers to those benefits arising from the proper alignment of supply and demand, ensuring that the market pricing signal triggers efficient production, purchasing and investment decisions by participants in the sector. The latter refers to those benefits arising from the publication and dissemination of market information, with the resulting price transparency providing a readily available, authoritative and neutral price reference to sector participants.

Special attention may be drawn to two particular categories of impact:

- Price dissemination, reduced information asymmetries and improved producer returns
- More efficient price formation and effective signalling for production, purchasing and investment decisions

Price-risk management

Due to high price volatility in energy commodities, a well-functioning energy exchange should provide price-risk management solutions by offering trade in commodity futures and options contracts. These instruments address the fact that as Governments have withdrawn from the sector, energy sector participants have become increasingly exposed to the notorious price volatility that has long afflicted global energy markets. Derivatives are the most prevalent instruments available for energy price-risk management. However, each instrument has a different functionality, different usage requirements and different cost implications – which makes the choice of instrument dependent both on the type of user and on the specifics of the user's situation (Cheng and Xiong, 2013).

Finally, market-based solutions may have substantial advantages over government intervention in dealing with energy price uncertainty:

- They rely on market-determined prices instead of administratively determined prices;
- They shift risk to those entities that are professional and willing to assume risks;
- They can be linked to financing instruments, in some cases making financing feasible at lower cost;
- In most cases, they cost less than government price intervention programs.

Venue for investment

Investment in energy futures markets yields other positive impacts. These include a potential hedge against inflation (expected and unexpected), and enhanced portfolio diversification because of low correlation in price development with traditional asset classes. Portfolio diversification is particularly important for pension funds and insurance companies, which typically aim to carefully balance risk and reward so as to fulfil their obligations to customers over a long-term horizon (Ghosh, 2014).

Facilitation of physical trade

The Orthodox theory argues that futures markets evolve after the development of a well-ordered cash market. However, recent experience suggests that in certain circumstances, the introduction of a commodity futures market can stimulate the development of the cash markets. Four facets of this effect can be identified:

- Generates improved spot pricing
- Reinforces cash market transactions
- Infrastructure enhancement
- Quality upgrade

Facilitation of financing to the energy sector

Lack of access to affordable sources of finance is a significant constraint faced by many entities in the developing world. Financiers often consider energy to be a particularly high-risk proposition for standard modes of bank lending. This means that producer and other entities in energy sector typically pay high rates of interest for borrowing, through both formal and informal channels. Alternatively, they may abstain from borrowing altogether, and become locked into a cycle of low investment and low returns. However, forms of energy finance have been developed that can reduce financiers' risks and costs of delivery, by linking traditional financial tools with energy exchange services.

Market development

Under this category, four developmental impacts are identified, by which exchanges can deliver benefits to producer and the market in general:

- Awareness-raising, education and capacity-building
- International trade facilitation
- ICT¹ upgrade and promotion
- Industry growth (United Nations, 2009).

The role of energy exchange in the economy roadmap

Since the early 1980s, the most developed countries and also some emerging countries have started to liberalize their infrastructural sectors. Schneider and Jager (2003) claimed that this change is closely related to the increasing importance of infrastructures to modern societies. Many commodity sectors in developing and transitional economies have undergone severe structural reform in recent decades. The energy sector liberalization was a part of the trend toward liberalization and the withdrawal of the state from involvement in infrastructure industries. In other word, energy markets function in both open and restricted economies. Some were created on a wave of economic reforms, others during political transformation and the transition to free market economy. In some countries, energy markets serve domestic markets, in others they are aimed at exports. While many energy exchanges operate in countries in which the market infrastructure, institutions and procedures are highly developed, and national markets are well integrated, they have also been successfully established in countries whose markets are in need of further development and integration. Energy exchange trading is continually developing and trading operations are becoming ever more complex (Baha-Karan and Kazdag ılı, 2011).

The energy sector is closely connected to economic growth because it generates and supplies energy to manufacturers and households. The liberalization of the energy sector helps create a more competitive environment in the industry and also facilitates the development of more efficient technologies.

¹ Information and Communication Technologies

In many developing countries exchange mechanisms promote the wider involvement of isolated energy sector participants in economic relations. It should be remembered that profits are not generated merely by the establishment of an energy exchange. Viable energy exchange mechanism requires complex regulation and involvement of a government.

World-wide experience shows that trade in commodities has little bearing on real economy these days and is increasingly becoming part of the financial market. Emergence of new energy exchanges stimulates regional integration by providing modalities for the conduct of cross-border transactions and links between energy-sector participants domiciled in different jurisdictions. Recently, the number of participants has significantly increased due to changes in legislation and technological advances which have profoundly altered the way energy exchanges operate. That is why an energy exchange plays a significant role in the economy roadmap.

The most important preconditions for a well-functioning energy exchange

Academics and policy-makers generally approve that financial development is associated with superior economic performance. All else being held equal, countries with better-developed financial systems have higher levels of per-capita real GDP. Besides, the evidence strongly suggests a causal element running from financial market development to superior economic performance (Wilson, 2012).

What should countries do so as to be able to reap the benefits associated with the process of financial development? Once they have built up their bank-based systems, how do countries move to the capital markets-based system that is superior at the later, more advanced stages of economic development? In case of energy trades, for such an environment with direct deal between buyers and suppliers, what should countries do to reap the benefits of energy exchanges? Table 1 figures out the most important aspects of an exchange. It helps policy-makers to target a specific level of sophistication and to plan for corresponding preconditions.

Financial system development does not happen overnight. Developing a financial infrastructure needs a significant commitment of resources. In most cases, the payoff will only be seen years later. Emerging economies that are concentrated on short-term growth and poverty alleviation may be unwilling to make the investment in this arena when the payoffs are not obviously visible or are unlikely to be achieved as fast as possible. Nevertheless, the investment is worth it (Rojas-Suarez, 2014).

In the early stages of financial development, one of the fundamental requirements for a market-based system is a basic institutional framework that includes well-defined property rights, bankruptcy laws, and competition laws, regulatory institutions for markets and corporations, and an effective judicial system that can uphold and enforce these. Some academics argue that the legal system is key to creating an environment in which growth can flourish. Others focus on the need to prevent corruption and to establish macroeconomic policies that are conducive to sustainable growth, as well as building robust political and economic institutions.

Table 1: Different characteristics of an exchange, from simple to advanced (African Development Bank Guidebook, 2013)

	From simple to more advanced				
Trading platform	Bringing people together in one location	Bulletin board	Auction	Open outcry ring	Electronic platform, compatible with global standards
Speed of trading	Hours	Minutes to days	Minutes	Seconds	Milli- or micro-seconds
Traded instruments	No standard products, trade on basis of reputation	Trade on the basis of samples	Trade on the basis of description/ grading certificates	Standardized spot contracts, warehouse receipts	Futures, options, repos
Brokerage structure	No brokers	Clients leave their commodities with brokers for their later sale	Clients give brokers instructions by phone	Electronic order flow from clients to brokers	Brokers approve clients who then trade directly
Clearing and settlement	Pre-selection of participants	Fixed guarantee deposits	Payments handled by exchange	All trades guaranteed by the exchange. Global risk management standards.	Clearing by unrelated third party clearinghouse. Linked to global clearing firms.
Use of Warehouse receipts	None	Warehouse receipts act as the instrument for the buyer's sale	Active trade in warehouse receipts, which change hands more than once.	Warehouse receipts act as delivery mechanism for the futures market.	Trade of repos backed by receipts
Standard setting and grading	None	Exchange offers simple grading services.	Exchange keeps samples of commodities traded, to help settle contractual conflicts	Exchange sets grading criteria, licenses graders and arbitrates quality conflicts.	Trade is in a narrow range of standard commodities. Exchange has strict grades and standards.
Price information	Prices sampled from market participants	Systematic collection of prices from representative pool of market participants	Contracted prices are registered at the exchange premises	Contracted prices are broadcast, with a delay (e.g., end of day)	Real-time price information distributed in many ways
Governance of trade	Committee of market participants control access	No government regulation. Arbitrage rules, enforced by exchange committee	Government regulator alongside self-regulatory exchange	Exchange or regulator also given powers to regulate warehouse receipts	Four separate regulatory structures for overall regulation, exchange operations, brokerage and warehouse receipts

Once the macro-policy framework is set and works efficiently, further steps can help the financial system to excel. As one of the most important infrastructures, the role of a well-regulated banking system remains important even once capital markets have assumed to have the largest role in the economy.

Some commentators suggest that the strong bank-based systems in Europe may have helped to shield the region from the fallout of the late-1990s financial crises. In Australia, the diversification gained from the combination of a robust capital market and a strong banking system may have provided similar protection from the regional contagion associated with the Asian crisis.

In the wake of the emerging-market crises of the 1990s, which showed how weak institutional structures can exacerbate the risks of liberalization, recent academic work has focused on the need to space out reforms to avoid overloading a developing system during the transition from a bank-based to a market-based system. Although there is no strong consensus on the appropriate sequence — or pace — of reforms, there is agreement that this transition should be undertaken gradually and carefully.

Key steps include:

- The creation of well-supervised money markets, energy exchanges, and efficient clearing and settlement systems that support the provision of liquidity to the financial markets and reduce systemic and market risk.
- Regulatory policies that encourage secondary trading for those derivatives which are commodity-based, including mark-to-market rules.
- The lifting of any controls on deposit and lending rates.
- The disavowal of explicit state-offered credit guarantees or deposit insurance, and an end to any state ownership of financial institutions. This would help to eliminate the problem of moral hazard that skews bank lending and constrains capital markets.
- The lifting of any restrictions on banks' "nontraditional" activities. This can encourage banks to enter the capital markets and promote competition in ways that appear to have been so helpful in advancing the capital markets.
- A credible and largely independent central bank.
- Improved transparency and disclosure for all market participants: central banks, regulatory agencies, banks, corporations, and investors.
- Incentives for market intermediaries to gather better information and conduct better risk assessment.
- Harmonization of accounting rules and principles with international standards.

- A focus by the legal system on strong protection of minority shareholders, rather than of creditors. Boosting public confidence in markets is an important step.
- Opening of domestic markets (and brokerages) to foreigners who can deepen liquidity and introduce competition — even if this sometimes results in higher volatility.
- Encouraging the development and participation of institutional investors.
- A shift in regulatory approach from one that is strictly rules-based to one that is more focused on risk management. As constraints are lifted and capital markets become more complex, opportunities for “gaming” a rules-based regulatory system grow, making the overall system more vulnerable. A focus on risk management allows greater flexibility and should reduce the system’s vulnerability to shocks.

Most academics agree that liberalization should be among the last steps on the path toward a well-developed energy exchange. This change is an important part of financial liberalization, but it requires a stable macro environment, a strong prudential framework in the financial sector, capable risk and liquidity management, and strong monitoring. Foreign-exchange regimes must also be considered in the context of energy exchange development. Currency pegs can be especially dangerous after liberalization. Countries wishing to liberalize their foreign exchange regimes will need to strengthen their prudential standards so as to provide a strong bulwark against the potential risk posed by rapid withdrawals by overseas investors. The creation of a derivatives market should also be among the later steps. While derivatives can help to deepen liquidity and manage risk, they require greater monitoring and are probably only suited to the best-developed energy exchanges. Expectations matter throughout the process. A government that is truly committed to developing its energy exchange will need to make its intentions clear and be convincing. In most countries this means persuading investors and lenders that no government bailout will be forthcoming in the case of a crisis. Establishing this credibility is not easy, but steps may include disavowing implicit guarantees and standing back from small-scale solvency crises. A capital-markets regulatory framework should be viewed as a continuous work in progress. Ongoing improvements in market transparency, banking regulation, and convergence of international accounting standards will be needed if energy exchanges are to continue to deliver the types of economic benefits outlined in this paper. As a concluding remark, the role of the government discussed here is twofold: an oversight role (eradicating malpractice and market manipulation, enforcing contractual obligations) and enabling role (creating the necessary legal and regulatory environment and, where necessary, elements of physical infrastructure). Regulation has three objectives: to guarantee market integrity, to uphold financial integrity and to protect the interests of investors from malpractice or the irresponsible behavior of counterparties and market intermediaries. Regulation is effected at three levels – on the capital market as a whole; on the energy exchange; and on the intermediaries between the energy exchange and clients (Dudley and Hubbard, 2004). Table 2 shows selected standard elements of a regulatory system according to the objectives and application level.

Table 2: Elements of a regulatory system (Maximchuk, 2013)

Objectives	Market-level regulation	Exchange-level regulation	Intermediary-level regulation
Market integrity	<ul style="list-style-type: none"> • Registration and licensing of exchanges, clearing houses and intermediaries; • Procedures for approval of new contracts; • Supervision aimed at preventing manipulation of the market, non-competitive behavior and other malpractice; • Auditing of self-regulating organizations (SROs); • Information exchange with foreign regulators to monitor participants and/or cross-border transactions; • Legal framework for the application of sanctions on market participants or institutions in cases of malpractice 	<ul style="list-style-type: none"> • Time-stamped audit trail of all trading activity; • Transparent reporting of transactions, prices and other market information for all participants; • Toughening up of requirements on position limits; • Audio and video surveillance of trading floor activity; • Accreditation and monitoring of delivery facilities; • Sensitive data treated with highest levels of confidentiality and security by exchange personnel and systems 	<ul style="list-style-type: none"> • Good character (or “fitness”) requirements for market intermediaries; • “Know your customer” requirements (including anti-money laundering provisions); • Protection of clients from malpractice and misuse of funds
Financial integrity	<ul style="list-style-type: none"> • Clearing houses minimum capitalization requirements; • Intermediary financial reporting requirements on brokers and intermediaries; • Requirements for the use of established accounting standards for positions taken in the markets 	<ul style="list-style-type: none"> • Clearing-member minimum capital requirements and capital-based position limits; • Clearing- house guarantee funds to compensate member losses in the event of default (fund created by clearing member contributions and backed by a default insurance policy); • Special measures for high volatility cases – trading halts, cool-off periods and imposition of special margin 	<ul style="list-style-type: none"> • Margin deposits from clients; • Client minimum capital requirements and capital-based position limits
Investor protection	<ul style="list-style-type: none"> • Legal framework that provides: (i) legal certainty for recognition of contracts and associated obligations of counterparties; (ii) definition of legal relationships between market participants in transaction execution, clearing and settlement, and delivery (clients, brokers, exchanges, clearing houses and settlement banks); • Monitor exchanges to ensure fair and equitable treatment of all participants; • Oversight of exchange governance – governing boards to reflect interests of all major stakeholders 	<ul style="list-style-type: none"> • Defined, transparent, binding rules and bylaws governing exchange operations, especially the delivery process; • Binding arbitration mechanisms for resolution of member disputes; • Binding sanction mechanisms for members in default of obligations 	<ul style="list-style-type: none"> • Qualification standards for, and licensing of, market intermediaries; • Governance of intermediary marketing practice (e.g. advertising standards, client solicitation and fee disclosure); • Segregation of client fund from brokers’ own funds; • Best execution requirements for brokers

Practically, governments mostly use expanded or reduced set of metrics as they have to maintain an accurate balance between maximization of benefits that rules and regulations bring along to market participants against the costs imposed on them in the presence of the regulatory functions. Moreover, governments usually face a challenge to reach a balance between external regulation by the government authority and self-regulation by the industry or its representative bodies. Getting this balance right is a function of the degree of confidence of both government and market participants in market institutions that could potentially act in a self-regulatory capacity (Maximchuk, 2013).

Recommendations

The following section provides recommendations for policy actions that can be taken to overcome some of the key challenges and accelerate the development process. This section is not meant to cover all potential development actions, but highlights select actions that hold the most potential to deliver impact.

The recommendations are grouped into two main categories:

Enhance market efficiency and transparency: How to enhance market infrastructure and intermediary activities to lower the burden and costs associated with participating in the market and allow supply and demand to be matched more effectively.

Attract global interest: How to establish a national direction for market development and improve the attractiveness of the domestic market relative to global markets.

Successful implementation of the recommendations assumes the following conditions:

- Macro-fundamentals have been established and/or are being addressed, which include sustained macroeconomic and political stability, fundamental rule-of-law and strong institutional framework, and a sound banking system.
- Government is committed to the development process.
- Policy actions taken by the government should be communicated clearly and applied consistently. Whereas investors are able to account for known market risks and price accordingly, unpredictability of doing business in a country dissuades investors from entering altogether.

Furthermore, ongoing partnership and dialogue with private-sector market participants is important to an effective market development process. Examples of how the government can partner effectively with the private sector include:

- In drafting regulations, the government can consult with or form advisory groups consisting of a diverse set of private-sector market players.
- Prior to launching new regulations and policies, policy-makers and regulators can release an initial draft for public commentary and allow the feedback to guide revisions.

Policy-makers should be reactive to the market and adapt as needed when unintended consequences of new regulations or reforms appear to adversely impact market participants.

Enhance Market Efficiency and Transparency

A. Improve information availability and accuracy

Market transparency is important for assessing the risks and returns of participating in a market, supporting an efficient price discovery process and, thus, providing confidence to investors to enter a given market. In an efficient market, market stakeholders should have unbiased access to timely and accurate market information, as well as historical records of this information to evaluate performance on an extended time horizon. To improve market transparency, emerging markets could:

A1. Establish robust reporting standards

Many emerging market participants that have traditionally relied on internal funding or bank financing may not have found the need to establish rigorous reporting standards.

A2. Competitiveness Index evaluation

Competitiveness Index evaluates countries on the strength of their financial auditing and reporting standards. Consistently over recent decades, emerging markets and frontier markets have underperformed the developed countries, although emerging markets are starting to converge with developed markets' levels.

A3. Improve collection and assimilation of market data

Investors face challenges in evaluating emerging markets due to limited information on the local companies and because historical market activities are not always captured and made available.

B. Enhance the competitiveness of market infrastructure and intermediaries

As market institutions worldwide become increasingly integrated, local market infrastructure providers will face stiffer global competition. Policy-makers should ensure that domestic market infrastructure is competitively positioned in cost and efficiency relative to other markets to attract issuers and investors to the market.

B1. Minimize fragmentation in market infrastructure

Many emerging countries have, through legacy or other reasons, multiple similar market infrastructure providers (e.g. several credit rating agencies) that may have overlapping functionalities. While multiple players in the market increase competition, it can also lead to market fragmentation and inefficiencies.

Policy-makers should weigh the benefits of local competition relative to the benefits of economy of scale and then determine whether to encourage consolidation among

market infrastructure providers or limit new entrants, for example, for post-trading activities such as clearing and settlement, where consolidation has significant benefits for managing financial risks and improving market transparency. Strategic alliances with global partners should also be considered when they can enhance market operations better than can be achieved locally (De la Torre, Gozzi and Schmukler, 2005).

B2. Ensure market infrastructure is competitively positioned

Market infrastructure providers have to be responsive not only to changing demands from market participants, but also to globalization, innovation and technology. To do so, their business structures and strategies should be well-positioned to take advantage of new business opportunities.

In early stages of market development, it may be more effective to have government-backed or closely held market institutions. Policy-makers should encourage privatization or demutualization as the market expands to ensure they remain competitive.

B3. Develop a sophisticated and competitive environment for financial intermediation

Issuers typically go through an investment bank to underwrite their issuances, which usually involves significant costs, such as advisory and underwriting fees. Policy-makers should encourage the development of a strong financial intermediation industry and foster constructive competition through deregulation of such activities and fee structures to place downward pressure on issuance costs.

The landscape for financial intermediation is changing. Emerging and developed markets alike should evaluate how the traditional capital markets model could evolve to address these new changes and take advantage of opportunities to expand access to financing.

Attract Global Interest

A. Form and communicate a clear strategy for development

As government sponsorship is a crucial element of successful development of an energy exchange, the formation and communication of a clear strategy is important for signaling that the government is committed to the development process, understands the key challenges and required actions, and is taking a comprehensive approach to development (Litan, Pomerleano and Sundararajan, 2003).

Furthermore, a credible strategy can promote market growth by minimizing market confusion and skepticism, and provide a platform for productive collaboration between government and public sector market participants. As part of forming the strategy, policy-makers should:

- Define a clear vision for the country's energy exchange
- Evaluate the current state of the energy exchange development and identify competitive advantages and structural challenges

- Outline an actionable and prioritized list of development initiatives
- Lay out an implementation framework, including proposed sequencing of the initiatives
- Establish a desired time frame for implementation

B. Implement a tax regime that is aligned with financial development objectives

Taxes related to energy exchange activities e.g., export and import of energy carriers are often important sources of revenue for emerging countries. As such, regulators need to evaluate the trade-offs between their ambitions for energy exchange development and fiscal objectives to determine whether to use tax incentives to encourage market participation.

There are elements that can be taxed that emerging countries can use as levers for tailoring their taxation framework to best support their financial development goals. These include the type of product taxed, the type of market player taxed, the base for taxation and taxation on holding periods less than the defined time frame. Chile is an example of a country that has imposed taxes on foreign investments with a holding period less than one year.

Regulators can determine the best lever to use by first defining which participants and capital markets sub-sectors should be incentivized as priority. Also, during the course of restructuring their taxation framework, regulators should review the current tax regime to see if there are any areas that may create disincentives for participation in the market.

For countries that have the ambition to establish themselves as a financial centre, minimizing or completely eliminating these withholding taxes may be essential to encourage foreign participation and remain competitive versus other international trading centers.

Last, tax code and operations should be articulated to minimize confusion among market participants.

Conclusion

Economic development is the measure of an economy's progress in terms of technology, industrialization and standard of living. Economic development depends on many factors that influence the speed of development. There are mainly two types of determinants which influence the economic development of a country, economic and Non-economic factors. Economic factors include capital formation, natural resources, conditions in foreign trade and economic system. Non-economic factors include human resources, technical know-how and general education, political freedom, social organization, corruption and desire to develop. All these factors are necessary for economic growth, in contact with each other, not lonely.

As a component of the economic system, a mature capital market that include variety exchanges such as stock exchange, commodity exchange and energy exchange can play

a significant role in economic development. An efficient energy exchange especially in countries with lots of natural resources such as oil, gas, coal, power and other energy carriers can provide a market-place in which price discovery, risk management, financing, energy trading and many other functions lead to economic development.

Many challenges exist on the way of a mature energy exchange. This study examined those challenges and represented the solutions. We hope putting recommendations depicted here into practice, excel the efficiency of the energy exchange and finally lead to economic growth.

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