Strategic Priorities for Stock Exchanges in New EU Member States

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ABSTRACT

This study discusses the strategic priorities and challenges for securities exchanges in new EU member states, with a special reference to the internationalisation of securities markets. The ways in which exchanges are responding to such challenges and other possible courses of action are identified. These concepts are then appraised in relation to the Malta Stock Exchange, one of the smallest exchanges of the new EU member states. The inherent size of this exchange reveals that the Malta Stock Exchange is somewhat insulated from the internationalisation process, yet future strategies must be well planned in order to ensure competitiveness and profitability.

1. Introduction

Securities exchanges play an important role in channelling funds from savers to productive users, which is an essential process for economic development and competitiveness. This study is concerned with the development prospects for securities exchanges in new EU member states (NEUMS). The paper reviews the main issues impinging on the progress of the latter exchanges which include increased internationalisation, the drive to augment securities business and consolidate liquidity, and more general issues such as the competitive edge which may potentially be gained through technology and investor protection. These concepts are of significant importance given that they determine the future profitability and hence survival of NEUMS securities exchanges. The paper then discusses the former notions in the context of the Malta Stock Exchange (MSE). Given that the latter is one of the smallest exchanges in NEUMS, any challenges may in fact epitomise in such a location and perhaps reveal "peculiar" characteristics.

The paper is structured as follows. Section 2 largely draws on existing literature and offers an outline of the strategic priorities and challenges for exchanges in NEUMS, with a special reference to the internationalisation of securities markets. Whilst the priorities are categorised in five different subsections, most of these are interrelated. The discussion in Section 3 appraises these concepts in relation to the MSE. Section 4 concludes.

2. NEUMS Exchanges

The member states which joined the EU in 2004 were Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. Most of the Eastern European countries were formerly planned economies, and their securities exchanges were only set up (or re-established) lately. Increased foreign banking presences indicate a higher degree of international integration in these countries. The economies of the Mediterranean countries Cyprus and Malta are overall more developed as compared to the other new entrants, as outlined by Facchini and Segnana (2003). Yet, the latter countries' exchanges were still set up lately in the 1990's. Most of the exchanges in NEUMS were established in conjunction with government privatisation programmes, whereby shares in previously government-owned institutions were sold to the general public.

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Most of the NEUMS exchanges are characterized by their small size and meek liquidity levels. An additional common factor is the modest presence of well-developed institutional investors which are required to foster trading, investment, and pricing efficiency. According to Claessens *et. al.* (2003), the market capitalisation of these NEUMS as compared to their GDPs is still low vis-à-vis other EU countries. On the other hand these exchanges typically use modern electronic trading systems, which give them a competitive edge over other institutions where parts of the process are manual and where there are no Central Securities Depositories.

The exchanges in NEUMS have to compete with other institutions in the global markets, including the main European exchanges such as Deutsche Börse, Euronext, and the London Stock Exchange. The latter exchanges typically attract cross-listings and Global Depository Receipts (GDRs) from less prominent exchanges, and indeed most of the major exchanges have tier markets which are aimed at smaller companies, such as those prevailing in NEUMS. This may partly explain why most of the NEUMS exchanges have lost listings as noted by Claessens *et. al.* (2003). One further factor which may explain the loss of listings in NEUMS exchanges is that some companies were bought by foreign institutions and subsequently delisted.

NEUMS exchanges are currently facing important strategic issues which include dealing with the implications of internationalisation, enhancing business and liquidity, reducing transaction costs through new technologies, as well as influencing various ancillary policies which impinge on stock market development. The implications of these issues on the profitability and survival of NEUMS exchanges are discussed below.

2.1 The internationalization challenge

Technological improvements and deregulation of financial markets have made it easier for investors to access information about foreign securities and to trade such instruments. This internationalisation process has led companies to market their securities to foreign investors, commonly by issuing GDRs. These receipts are issued by financial institutions and are backed by holdings of underlying shares. GDRs trade on exchanges and over-the-counter markets and pay dividends similarly to the underlying shares.

An extensive number of securities which were issued by companies in NEUMS were cross-listed on larger exchanges, as outlined by Claessens *et. al.* (2003). As NEUMS eventually adopt the Euro as their currency, one may expect that this trend will be facilitated, since it would be easier to manage exchange rate risks and in most cases eliminate them. The main concern about internationalisation for NEUMS exchanges is that business may be diverted away to larger exchanges.

The effectiveness of internationalization has also been investigated in previous literature. For instance Karolyi (2004) noted that trading activity in some depository receipts may in fact be minimal due to negligible interest on part of foreign investors. Similarly, Pirrong (1999) and Baruch, Karolyi and Lemmon (2003) constructed theoretical models predicting that the order flow for a given product tends to converge to a single exchange. One practical reason for this is that traders tend to submit orders to those markets with higher liquidity, and this diverts orders away from less liquid ones. There are reasons to expect the home market to be a more liquid venue for securities, given that home market traders may be following the particular security more closely and are more likely to trade immediately upon new information releases. When the GDR issue is not of a significant size, participants in the overseas market might not be following such developments as closely.

Whilst these thoughts may dampen the worries of NEUMS exchanges about internationalization, one should still consider the impacts of this trend. One salient issue is that the larger and more liquid securities are more likely to be successful in cross-listing overseas, since these can generate higher interest on the part of international investors. Therefore, if the order flow relating to the more liquid securities migrates overseas, this would translate into considerable lost business for the smaller exchanges, as well as loss of liquidity. This was confirmed by various studies such as Levine and Schmukler (2003) who studied data for a large number of stocks from different countries which accessed overseas capital markets. Karolyi (2002) derived the same result using depository receipts data of companies originating in Latin America and Asia. Moel (2001) used a sample of 28 stock markets and found that the decline in liquidity may also result in reduced ability of the local stock market to promote economic growth.

Some contrasting evidence was presented by Foerster and Karolyi (1998) who studied transaction cost data for stocks listed on the Toronto Stock Exchange. The authors found that the stocks that cross-listed on US exchanges experienced a decline in transaction costs which they attributed to a higher competition for order flow following cross-listing. Yet, one may question whether such outcomes may in fact be expected in case of low liquidity stocks, where the fragmentation may actually result in two illiquid markets. Hargis and Ramanlal (1998) built a theoretical model to examine the circumstances where cross-listings are likely to have positive impacts on the development of the home markets. They concluded the greatest potential for development lies when securities from illiquid markets with lower degrees of foreign ownership, cross-list to more liquid transparent overseas markets.

When drafting a course of action on how NEUMS exchanges should deal with internationalisation, one should identify the factors that encourage firms to cross-list in order to address them. One may think of different motivations for cross-listing, including the ability to tap funds at a lower cost, broadening the investor base, and the prestige related to listing on a larger market. Reese and Weisbach (2002) studied a cross section of US bank depository receipts and argued that one motivation for listing abroad is to protect the interests of minority shareholders. Similar evidence was found by Pagano *et. al.* (2002). La Porta *et. al.* (1997) and Pagano and Volpin (2005) presented evidence of the positive correlation between shareholder protection and stock market development. This implies that increased shareholder protection in the home market should encourage local trading activity.

One policy adopted by exchanges to tackle internationalization was to create alliances with peers. A particularly attractive option for NEUMS exchanges is to conclude agreements with larger exchanges given that the latter may present the highest potential for benefits. Yet, this might not turn out to be the case in practice, given that an agreement whereby most benefits accrue to one party is not likely to be successful. Concluding an agreement becomes even more complex when issues relating to the financing of proposed projects have to be considered.

An exchange may collaborate with other exchanges or outsource particular functions, as discussed by Claessens *et. al.* (2003). Activities which offer potential for economies of scale if conducted jointly between exchanges include order execution, data warehousing, clearing and settlement, information dissemination and marketing functions. Exchanges may share the expenses related to the purchase of tailor-made systems, as outlined in Section 2.4. These considerations underscore the importance that IT systems should be compatible. Nonetheless, the issues relating to financing such projects still emerge. Therefore, agreements should provide for procedures regarding the solving of disputes and the sharing of potential benefits.

Overall, internationalisation presents a significant challenge to NEUMS exchanges, albeit not necessarily related to EU accession itself. The way in which exchanges tackle the internationalisation challenge will impinge on their success, and perhaps survival.

2.2 Increasing business

Two pre-conditions for stock exchange survival are competitiveness and profitability; these entail institutions to monitor their expenditures and revenues. As for the expenditure side, cost cutting strategies might not be optimal since according to Claessens *et. al.* (2003) they can make markets less attractive. On the other hand, if exchanges attempt to increase revenues through higher fees, it might be difficult to attract new listings and to discourage stocks from trading abroad, as noted by Pagano *et. al.* (2002). One alternative strategy which exchanges may adopt is to increase the volume of business, and this is important to realize economies of scale.[1] Yet in case of smaller exchanges, it might entail collaboration or merging with other exchanges for these benefits to materialise, as outlined by Hasan and Malkämaki (2001).

Enhancing listing and trading activity on exchanges is a two-sided effort, in the sense that both the demand and supply of securities have to be nurtured. Encouraging investors to approach the market entails having an adequate legal setup in line with international standards which safeguards shareholders' rights and guarantees efficient services of dispute resolutions. In addition securities market regulation has to be enforced. These issues are discussed further in Section *2.5*.

In enhancing the supply of securities, exchanges can target first-time listing companies and several programmes were set up with this specific aim. Yet, according to Claessens *et. al.* (2003) these initiatives on part of regional exchanges had limited success. Attracting first time-listing companies, implies that exchanges have to cater for differing listing processes, since typically the listing requirements of such companies are different from those of established companies. Therefore most exchanges organise different tier markets, since not all companies can satisfy stringent requirements. Yet, it is equally important for exchanges to educate prospective investors as regards the differences between the companies listed in different tiers of the market.

Finally, exchanges may also consider generating higher revenues by diversifying in related services such as settlement systems and derivatives products, although the latter usually require well-developed underlying markets.

2.3 Enhancing liquidity

Liquidity may be defined as the ease through which a trader may transact assets at reasonable cost. One factor which contributes towards liquid markets is trading activity – the more active an asset the easier it is to transact it. Whilst liquidity is thus related to the "depth" of the market (i.e. the volume of activity in a given asset), it is also related to the "width" of the market (i.e. the variety of assets which are available for trading). This is due to the fact that investors occasionally take profits and substitute their assets for other ones, thereby generating market activity. Yet, if the market offers few potential substitutes, investors might have to hold on to their current assets. Therefore the liquidity aspect is closely related to the objective of increasing business levels, as discussed in Section 2.2.

Liquidity is also related to internationalisation, given that the latter may result in changes in home market activity. Conversely, large exchanges have a competitive edge in terms of their ability to offer liquidity at a low trading cost. This implies that increasing liquidity should be a top priority across exchanges in NEUMS.

[1] The existence of economies of scale in stock exchanges was confirmed by Hasan and Malkämaki (2001) in an empirical study of various exchanges from different continents.

Enhancing liquidity is one of the major objectives of the trading protocols adopted by exchanges. Increasingly, modern markets are relying on automated systems such as electronic order-matching facilities, whereby orders queue in an order book and are then executed through price and time priorities. This method of liquidity provision depends on the availability of orders on the opposite side of the market. Therefore, whilst such a feature is cost-effective and usually transparent for liquid stocks, it might not be sufficient to ensure liquidity for less popular stocks with minimum trading activity. In addition, various exchanges prefer to process larger transactions through some degree of human input given that such transactions may result in high price concessions and at times are interpreted by other participants as insider trades.[2]

In the absence of large amounts of market activity, exchanges may consider emphasising a "human element" to foster liquidity. Market makers hold stocks of assets and may engage in arbitrage activities that ensure that trading prices do not diverge materially from fundamental values. Other participants who may provide liquidity are institutional investors; yet the latter may also demand liquidity rather than supply it since they often trade in large amounts. Indeed, institutional investors are often uninterested in getting involved in those markets that do not guarantee suitable levels of liquidity.

Features of the trading protocol which may impinge on liquidity also include the existence of call auctions. Vayanos (1999) argued that call auctions batch a number of transactions which might otherwise execute sequentially, and therefore auctions tend to raise liquidity at given points in time. Yet the empirical evidence on the contribution of auctions to liquidity is somewhat mixed, and the actual relationship may also depend on other related market features such as size and price limits, as discussed by Kairys *et. al.* (2000).[3]

Exchanges should adopt protocols that enhance market liquidity, although inferring whether a particular protocol is in fact optimal is not a straightforward task.

2.4 Technology

Exchanges should aim to process transactions at a low cost in the interest of profitability and competitiveness; technology is a decisive factor which impinges on how this objective may be achieved. Cost savings may be realised by using the software and/or hardware of other exchanges. In an empirical study focusing on European exchanges, Hasan and Schmiedel (2004) showed that network cooperation between exchanges may present potential benefits including higher market capitalisation and lower trading costs. According to Schmiedel (2001), agreements which permit exchanges to join forces and invest in a tailor-made system may enhance the operating efficiency of exchanges. In addition, the shared costs should make it easier for the exchanges to reap the benefits of economies of scale related to investing in a new trading system.

Such tactics enhance the potential for collaboration with other exchanges, whilst still retaining the distinct identities of the latter. Despite this, such agreements may be difficult to conclude since these entail negotiating the compensation and shared benefits, and conflicting ideas may arise when evaluating subsequent system upgrading and maintenance activities. In addition, if such system sharing schemes are not carefully thought out, they may result in reduced autonomy for the respective exchanges.

[2] The special characteristics of block trades were discussed by Tinic (1972), Kraus and Stoll (1972), and Chan and Lakonishok (1995). Huang and Stoll (1992) discussed the special arrangements which might be required for handling large trades.

[3] Empirical studies on the impacts of call auctions on liquidity include Amihud *et. al.* (1997), Comerton-Forde (1999), Kehr *et. al.* (2001), Ellul *et. al.* (2003) and Camilleri and Green (2006).

2.5 Ancillary issues

Exchanges may only prosper if the development of the underlying securities market is fostered. This implies that exchanges may benefit from upgrading various "subsidiary" items such as securities regulation, the general legal setup, capital market liberalisation, and investor protection. Whilst some of these factors might not constitute the immediate objectives of exchanges, the latter should endeavour to steer progress in their business environment.

For instance, higher investor protection should make it more attractive to hold traded securities. Investor protection includes an array of issues which range from corporate governance, timely disclosure of information and effective auditing functions which are required to minimize corporate fraud. In addition, investors should be educated as to the way in which they can optimize their portfolios, including the relative risks attached to their holdings. Similarly, it might be difficult to attract institutional investors in the absence of an efficient legal setup, including facilities for the settlement of legal disputes within an acceptable time frame. In the absence of improvements in these factors, securities may migrate to foreign exchanges. This was empirically confirmed by Pagano *et. al.* (2001), who found that European securities tend to cross-list in countries where investor protection and efficient courts are given higher priorities.

2.6 Overall note

The above challenges imply that survival of NEUMS stock exchanges can be difficult – in fact, according to Claessens *et. al.* (2000) some of these economies may end up without exchanges and import the services of other exchanges. Yet this may not necessarily be the case as outlined by Kavajecz (2002) and Claessens *et. al.* (2003). According to the former author, it might not be optimal for a country to depend on a foreign exchange, given that the ability to raise capital might be compromised should political disagreements arise. Claessens *et. al.* (2003) also outlined the necessity for countries to have their own exchanges whose practices such as listing fees and market tiers are in line with the profile of home companies. Overseas exchanges are unlikely to tailor-make their requirements for the companies of any particular country, even though they develop various listing programmes aimed at attracting different company categories.

Whilst the global securities markets are highly influenced by the big names, the role of smaller stock exchanges should not be overlooked. Smaller exchanges should serve as a means through which smaller companies can tap funds. Such companies may be well known within their region however they may find the marketing campaigns and fees involved in listing on a major exchange to be prohibitive. Through the use of appropriate technology and infrastructure, the securities listed on smaller exchanges may be accessible internationally. This should reduce the traditional disadvantages of remoteness from the major financial centres, even though it does not guarantee the interest of overseas investors. Smaller exchanges may exploit the potential to create a niche market by retaining particular characteristics, although this strategy should not compromise the compliance with international standards.

Overall, the above strategic priorities emphasize the importance that exchanges should be equipped with the appropriate human resources and technological systems in order to address future challenges. The above concepts are now discussed in the context of the Malta Stock Exchange (MSE).

3. A case study: the Malta Stock Exchange

There are several reasons why MSE was selected for this case study. Firstly, this exchange has been largely unconsidered in similar research papers. Secondly, when studying MSE we are covering the general securities markets for Malta, given that MSE is the only exchange on the island and no significant over-the-counter activity is undertaken. This is an important feature given that in the absence of this, the general securities market of a country may not exactly correspond to the business of the exchange, and the research would omit a portion of the securities activity. A third reason for focusing on MSE is the inherent small size; whilst this is common to most exchanges in NEUMS, the problems associated with small size tend to epitomize in such a setting. In addition the fact that MSE is smaller than most other NEUMS exchanges, may also present "peculiar" characteristics that are not observed on other markets. Despite these advantages of focusing on MSE, the modest number of securities quoted on the exchange does not present a significant scope for a mathematical appraisal of the above concepts, and a qualitative case study approach may be preferable.

MSE is one of the smallest NEUMS exchanges. During the initial stages, the number of transactions during a typical MSE trading day did not exceed fifty, although transactions have recently registered an encouraging improvement – for instance the average transactions per day during January 2006 amounted to around 190. Trading activity is low primarily due to the fact that a small population of less than half a million people, results in a restricted number of potential investors and trading requirements. In addition, Maltese individual investors tend to adopt "buy and hold" strategies where they hold particular securities for a long period of time.[4] The small size implies that Malta is relatively unimportant as compared to other emerging markets. For example, whilst considerable capital flows are directed towards developing economies in Latin America, Eastern Europe and Asia, Malta is virtually excluded from the international investors' map. Emerging market reports do not typically feature Malta as a potential source of financial investment and international portfolio managers do not provide products which invest exclusively in this market. This impinges on liquidity and price efficiency of the market, given that larger markets thrive on the presence of institutional investors.

When MSE was set up in the early 1990's, trading was manually conducted by around ten stock-broking firms. The choice of a manual system was intended to enhance transparency through the resulting "human bargaining" process. Clearing and settlement were fully electronic. Once the market developed, an electronic trading system was introduced in 1995, and fixed commissions were abolished. As outlined by Azzopardi and Camilleri (2003), no significant market making, short sale and derivatives activities are conducted on MSE. An Alternative Companies Listing facility was introduced in 1999, which is intended for companies without a trading record. As at January 2006, the securities trading on MSE comprised 14 equities, 26 corporate bonds, as well as several government bonds.[5] In addition, hundreds of investment funds are quoted on the exchange, although the latter are not traded on the market. Whilst these figures might be encouraging when considering the small size of the island, it still remains difficult for the exchange to take advantage of economies of scale. Despite this, the operations of the exchange have been mainly profitable throughout the past years.

Trading turnover on MSE was traditionally dependent on three equities: two major banks and a telecommunications company. During the year 2005 other equities consolidated their relative importance on the market. Despite this, equity trading remains unevenly distributed, with six out of 14 equities accounting for around 88% of trading volume for the year 2005.[6]

[4] The validity of this assertion becomes apparent when considering that the less liquid securities on the exchange can go untraded for days, implying that the investors who hold the particular securities are not interested in selling. The reluctance of investors to trade frequently is also apparent in non-Maltese markets, as discussed by Warneryd (2001; pp.5).

[5] Malta Stock Exchange Monthly Report, January 2006.

[6] Malta Stock Exchange Monthly Report, December 2005.

3.1 The internationalization challenge

The impact of the internationalization on MSE in terms of migration of trading activity, mainly took place in Maltacom plc. The latter is a telecommunications company which is one of the major traded equities and this confirms the observation that cross-listing tends to be more prevalent among the major listed companies. Yet, this particular GDR issue does not transpire to have been successful and according to Rizzo, Farrugia & Co. (Stockbrokers) Ltd. (2003), the amount of outstanding Maltacom GDRs decreased from 20% to around 3% of the issued share capital, from 1998 to 2003. The re-conversion of the GDRs into ordinary shares traded on the home market implies that there was limited interest in the GDR issue – otherwise buying back the latter instruments from overseas investors would have been costly. This example confirms the observation by Karolyi (2004) that some GDR issues might turn dormant and trading activity subsequently flows back to the home country.

Significant depository receipts activity may prove to be difficult for most Maltese companies given that major exchanges usually expect cross-listing companies to have a trading track record as noted by Kavajecz (2002). In addition, for an issue to attract sufficient overseas trading it has to be of a comprehensive size. This further limits the population of Maltese companies which may successfully cross-list given their limited capitalisation.

The notion that GDR issues on part of Maltese companies may have limited potential for success still holds when considering the information aspect. Comprehensive information dissemination and analysis may not materialize in case of companies such as Maltese ones, given that overseas analysts might find these efforts unreasonable in case of small-sized securities.

The fixed costs related to cross-listing should also be considered. Section *3.2* discusses how the fixed costs related to a primary listing may be high for Maltese companies, given that the limited amounts of financing which are usually required might not justify the outlay. This implies that the additional costs associated with obtaining a cross-listing might be even less justifiable. Moreover, primary equity issues listed on MSE are usually oversubscribed, and therefore the benefits of obtaining additional finance through cross-listing do not seem to apply.

The above arguments imply that the "threat" for MSE in terms of cross-listings may not be imminent. In fact MSE has not lost any listings up to now, unlike most other accession country exchanges. Yet one should still note that if such outcomes do occur, their effects may be even worse in case of MSE given that the order flow is heavily dependent on the main equity issues. The loss of activity of any of the latter issues may have material consequences.

The same reasoning may apply to the listings of collective investment schemes given that as investors gain easier access to information dissemination from foreign exchanges, such schemes might consider delisting after having built up a reputation with the investing public. Whilst this would not impact on the liquidity of the exchange given that these funds are not actually traded on MSE, such delistings would imply reduced fees for the exchange.

One final question is whether an exchange as small as MSE can survive the internationalization trend. The arguments presented above suggest that Maltese companies are currently small by international standards to migrate to foreign exchanges. Yet, one should not overlook the possibility that these companies may undergo merger activity with foreign ones, being delisted in the process, with the main entity trading on an overseas exchange. Thus, overall it is important for MSE to endeavour to attract new company listings, both for the purpose of increasing trading activity, as well as an "insurance" against such delisting possibilities. MSE's involvement in the initiative to develop a trading platform for Mediterranean companies may also address the internationalisation trend, and perhaps take advantage of it. The next sub-section discusses these alternatives.

3.2 Increasing business

The potential for MSE to attract new listings from local companies is hindered, not only by the small population of firms but also in view of the small size of firms. The latter element implies that the fixed costs related to an IPO and listing may be too high to justify, given the required financing amount. Pagano *et. al.* (1998) also argued that in case of Italian firms, one particular factor which contributes to such costs is that the final accounts of firms have to be audited prior to listing, and this may result in a higher taxation bill. This may be applicable to Maltese companies as well.

These arguments imply that there is a limited amount by which MSE can increase its listing fees. Yet the exchange should not increase listings at any cost – firstly, listing fees should enable the exchange to recoup its own costs, and secondly, international standards should not be compromised when considering the listing "costs" in terms of increased disclosure and management scrutiny. In addition, new listings should be significant enough to generate public interest and trading.

One further factor which MSE has to consider is that as the home financial markets develop, companies may obtain increased access to alternative sources of finance from venture capital firms and other non-bank financial institutions. This would further reduce the potential to attract new listings. Given the above arguments, MSE should be looking at ways of generating new business which are not confined to the listing of home companies in order to supplement the revenue generated by this activity. This may explain MSE's recent participation in a project which may potentially involve the setting up a trading platform for stocks listed on various Mediterranean exchanges.

Another potential source of business for MSE might be in seeking to attract cross-listings from North African countries. One rationale behind this is that Malta enjoys goodwill from these countries because of its reputation of an "intermediary" between European and North African countries, partly due to its geographical position. Reasons why North African companies may be attracted to cross list on MSE include the geographical proximity and the potential for increased shareholder protection, as discussed in Section *2.1*. Yet, attracting North African cross-listings is not necessarily an easy objective to accomplish. For instance, the interest on part of the Maltese public might not be high enough to attract significant amounts of funds towards such companies. Another barrier might be cultural differences given that most North African countries follow Islamic finance practices. In addition, the potential for attracting such cross listings on the basis of a superior legal and supervisory setup might diminish as North African countries upgrade their legislations and practices.

Another potential alternative source of revenue for MSE might be the introduction of derivative products, although this entails more developed cash markets and a higher level of investor education.

3.3 Enhancing liquidity

Most of the securities quoted on MSE are characterised by relatively low activity as compared to those quoted on more developed markets. Given the market's small size one may encounter situations where the majority of traders diverge to one particular side of the market, say most traders would like to sell. This results in comparatively higher price movements. Similarly, institutional investors may impose a strain on the market if they trade in large quantities.

As discussed in Section *2.3*, liquidity does not necessarily increase by a change in the trading protocol. This may be particularly so in case of MSE. Liquidity on MSE might increase somewhat through a change in the investors' habits, where the latter monitor the market more closely, trade upon their expectations and take profits more frequently. This highlights the importance of aiming at a higher proportion of suitably informed investors as discussed in Section *3.5*. Such factors should also promote a more efficient pricing process.

Despite the restrictions in secondary market activity, one should note that primary market issues are typically over-subscribed, and this may encourage further future listings – albeit the primary market activity in terms of new corporate listings has recently slowed down.

3.4 Technology

As noted above, it may be difficult for MSE to reap the benefits of economies of scale in the absence of collaboration with other exchanges. MSE has its own automated trading system, together with a Central Securities Depository where the ownership of traded securities is registered. This system may now be considered as a sunk cost, however it might be appropriate for MSE to consider collaborating with other exchanges in sharing the expense of a new tailor-made system in the future. Whilst this should be done at a time when a major component of the trading system needs upgrading, the setting up of collaboration agreements should be well-thought in advance, given the practical difficulties involved as noted above. In the absence of such collaboration, MSE should ensure that the investment in a new system should not be excessively costly given that this might translate in prolonged time spent in recouping this capital expenditure and increased transaction costs.

3.5 Ancillary issues

MSE has a particular incentive to foster the general development of securities market-related aspects given that these may attract more investors, and ultimately trading activity to the exchange. As discussed, increased shareholder protection should hinder the migration of listed companies to other exchanges. Investor protection implies a number of safeguards including rigorous procedures to defend minority shareholders and simple procedures for seeking redress when a court establishes that misleading statements have been made. Public education programmes should make investors aware of such issues. Investor education programmes are important in the Maltese setup given that market research on part of local brokers may only be feasible if the level of business justifies the resources spent on such activities. Education programmes may partly compensate for this factor, given that they enable investors to keep abreast with the latest company events and prospects.

Further desirable policies include tax stability, given that taxation is one of the investors' main considerations prior to committing their money. Similarly, the legal and regulatory setup should not cause inefficiencies for listed companies since the small size of the latter may translate into considerable compliance costs. Whilst industry standards in terms of disclosure and related items should not be compromised, one must ensure that complying with listing requirements does not translate into an unnecessary burden. The improvements in the legal and regulatory setup should not turn into excess bureaucracy.

3.6 Overall note

The operations of MSE have been profitable up to now and the exchange has not suffered any material consequences from migration of stocks. Yet, the exchange should endeavour to sustain its profitability in view of possible increased competition, including competition at the European level. Given this, any outlays on long term investment should be thoroughly evaluated in order to ensure that such costs are justifiable in view of the current market activity. One possibility is to seek agreements with other exchanges in order to share significant expenses and possible benefits. Yet, finding interested parties and implementing such agreements may be challenging.

Up to now, one main listing source for MSE was the privatisation of government entities. MSE should now focus on attracting more listings from private limited companies and smaller businesses. This would be in line with the objective of assisting the financing activities of home companies, most of which operate on a small scale. Yet, given the limited number of local companies and that their size might not justify the listing costs, MSE should also endeavour to attract a higher degree of overseas regional business as discussed above.

4. Conclusion

This analysis described the current challenges for securities exchanges in NEUMS and outlined strategic considerations and possible actions which should be evaluated in addressing such factors. A case study focussing on MSE applied these lines of thought to a small market setting. Despite that MSE is somewhat "insulated" from current internationalization trends, it should still aim to generate additional business in order to sustain profitability.

Whilst exchanges will be key players in determining how such challenges will be addressed, the possible courses of action do not depend entirely on these institutions but also on policy makers and other participants in the securities markets such as regulators, institutional investors and the companies seeking finance. This implies that the exchanges' human resources who get involved in external contacts are one key element in influencing whether and how additional business may be generated. This becomes even more evident when considering that possible courses of action include strategic alliances with other exchanges.

This study has largely assumed that companies shall continue to demand the services of securities exchanges, at least at the regional level. This is a reasonable assumption in the short to medium term. Yet, exchanges should also consider the possibility that in the longer term securities activity might accrue to a select number of large exchanges and computerised alternative trading systems. If this occurs, the survival of various exchanges – including those in NEUMS – might be compromised.

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