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Organizational perspectives for Stock Exchanges in a fragile global world: Forecasts and Speculations

Abstract

The new millennium crises have fueled the debate about free running markets management, in some parts of Europe. This is having considerable consequences for corporations that need to raise funds to invest in job-creating facilities or in improving productivity necessary to compete with new producers from Asia. Increasing volumes of trade historically required rules and government regulation. In this article organizational theoretical frameworks are used to understand dynamism and change in financial operations, and in this line rules are here approached as progressive legal adjustments to good practice. Historical evidence is the methodology used in this paper, to highlight significant changes in the conceptualization about the organizations that have to supply financial services, especially when external shocks affect SMEs and their needs.

Keywords: stock exchanges, capital markets, business funding, organizational aspects

Perspectivas organizativas para las bolsas de valores en un mundo global frágil: pronósticos y especulaciones

Resumen

Las crisis del nuevo milenio han alimentado el debate sobre la gestión de los mercados de funcionamiento libre en algunas partes de Europa. Esto está teniendo consecuencias considerables para las compañías que necesitan recaudar fondos para invertir en instalaciones que creen empleo o en mejorar la productividad necesaria para competir con los nuevos productores de Asia. Históricamente, los volúmenes crecientes de comercio requerían reglas y regulación gubernamental. En este artículo se utilizan marcos teóricos organizacionales para comprender el dinamismo y el cambio en las operaciones financieras, y en esta línea se abordan las reglas como ajustes legales progresivos a las buenas prácticas. La evidencia histórica es la metodología utilizada en este documento, para resaltar cambios significativos en la conceptualización sobre las organizaciones que deben brindar servicios financieros, especialmente cuando los choques externos afectan a las PYME y sus necesidades.

Palabras clave: bolsas, mercados de capitales, financiación empresarial, aspectos organizativos

Perspectives organitzatives de les borses en un món global fràgil: previsions i especulacions

Resum

Les crisis del nou mil·lenni han alimentat el debat sobre la gestió dels mercats lliures, en algunes parts d'Europa. Això està tenint conseqüències considerables per a les companyies que necessiten recaptar fons per invertir en instal·lacions de creació d'ocupació o per millorar la productivitat necessària per competir amb nous productors d'Àsia. L'augment dels volums de comerç requeria històricament regles i regulacions governamentals. En aquest article s'utilitzen marcs teòrics organitzatius per entendre el dinamisme i el canvi en les operacions financeres, i en aquesta línia s'aborden les regles com ajustos legals progressius a les bones pràctiques. L'evidència històrica és la metodologia que s'utilitza en aquest treball, per destacar canvis significatius en la conceptualització sobre les organitzacions que han de subministrar serveis financers, especialment quan els xocs externs afecten les pimes i les seves necessitats.

Paraules clau: borses, mercats de capitals, finançament empresarial, aspectes organitzatius

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1. Introduction

“Exchanges were human constructions devised to meet the needs of advanced economies. As such they both arose from economic growth and contributed to it”. (Michie 2010, 14.)

More than before, the new millennium crises have fueled the debate about free running markets management, in some parts of Europe where anti-capitalism still attracts the sympathies of many voters. This is having considerable consequences for corporations that need to raise funds to invest in job-creating facilities or in improving productivity necessary to compete with new producers from Asia.

In many countries Stock Exchanges evolved from regionalized into national solutions, and even accepted their subsequent integration into transnational conglomerates of organized markets, and Derivatives Exchanges merged amongst themselves or with the traditional Stock Exchanges. It must have been the result of some very powerful reasons. In what way must they be viewed as a consequence of management expertise?

Historical evidence is the evolutionary methodology used in this paper. If organizational frameworks are a requirement for dealing in financial operations, rules can be approached as progressive legal adjustments to good practice (Telles 1985). According to Edward Stringham, “In the seventeenth century, the Amsterdam Bourse developed surprisingly advanced trading instruments at a time when government courts were unaccustomed and unable to deal with what today would be considered common financial transactions. Much of the dealings that took place were actually prohibited by law, although the law was ineffective and not strictly enforced.” (Stringham 2002, 2)

Should one alternatively look at those legal adjustments to good practice as a set of organizational instruments and principles for cooperating with other stock markets? Or are they

an element for national and international competition among stock markets? Despite the publication of stock market regulations, the regulation on brokers was missing in some cases.¹ As organizations, Stock Exchanges claim a historical heritage for their role, which was made of a free atmosphere for financial business management, and informal mechanisms of enforcement based on business honor imputed to national character. As for other European stock markets, the word stock-market designated the principle for the organization of the institutional market, as well as the registration of the operations, the institution itself, and the physical location (the house) where negotiation and dealing operations occurred (Braudel 1979, 78).

The new millennium severe shocks, such as crises, pandemic events, and wars, may require organizational adjustments for a fragile global world, where evidence from past stock exchange organizational aspects may bring a plus. Time-horizons are being changed in these new-millennium years, because each market has its own geopolitical profile, and strategic investment from different market participants must consider specific risks. Information on new geopolitical events under realistic constraints can change the profitability of portfolios for heterogeneous agents in stock markets. What can we learn from the past? Can historical intelligence enlighten a possible overall new structure for financial markets? According to Andrade, Mitchell and Stafford (2001) mergers and acquisitions (M&A hereafter) occur in waves, clustered by industry in each wave, because of industry-level shocks. The historical nature of shocks may range from global crises, technological innovations, to deregulation (as in the 1980s, for example). As they create imbalances to small-medium enterprises (SMEs here-

¹ In Portugal, for example, the auditing requirements became optional after the law of 11 April 1901 (Duarte 2008, 27). This regulation would last for long: as in other markets, the Lisbon Exchange experienced increasing relative stagnation throughout the first half of the twentieth century, bank loans were the main source of capital funding for firms, and no new regulation was needed.

afhter), such imbalances will be explored through M&A. After the presentation of the historical plural stock markets in Section 2, Section 3 proves that local funding from stock markets should support SMEs, as it is possible to identify significant abnormal efficiency and returns whenever their strategy goes to M&A among them, as suggested by Kachaner, Stalk and Bloch (2012). The case of the Euronext context in Section 4 is the departing point for new solutions in Section 5, and conclusions in Section 6.

2. The historical times of plural Stock Markets

Financial activities characterized cosmopolitan capital cities of Europe throughout centuries, and Lisbon pioneered this trend thanks to the Discoveries (Justino 1994, 1-5). Maritime traffic of commodities, those brought from recently discovered overseas regions, required funding for investment (Marques 1987, 176), while government payments abroad were rented to bill brokers, district by district throughout the country (Justino 1994, 31). Lisbon pioneered the management experience of world trade, shipping, and maritime insurance, thanks to the Discoveries and the circum-Africa international trade route (Mata, Costa and Justino 2017). Since then, the role of the Portuguese trade and financial market in the global network of financial operations has been reflected in the special settings that framed the Lisbon Bourse. It is even possible to say that this framework became a market-maker, due to the concentration on local specialities throughout the 1500s, but it lost prominence in the following century (Barbosa 1874). The vigorous Brazilian trade in the eighteenth century re-instated Lisbon to a world-market management position, in part due to the monopolist companies that were engaged in colonial commodities traffic. Networked professionals and cosmopolitan traders gathered then in a new trading room, built after the 1755 earthquake (stockbrokers, bankers, company promoters, accountants, lawyers, information providers, directors, and security marketing specialists) although no formal investment analysts and trust companies were yet available.

Stock market growth and economic development demand a legal framework, and it was only during the first industrialization phase of the 1860s to the 1890s that most Exchanges grew large enough to really drive organizational and managerial legal changes (Oliveira 1891).

The natural development of Stock Exchanges in Europe and America justifies the legal status historically adopted in many countries: simple private associations of stockbrokers that were established to manage the means for their members to trade securities (Ulrich 1906). The self-enhancement of the word *member* has been a direct consequence of this club-like character initially adopted by most Stock Exchanges (Cagigal 2009). Only members of such a club could enter the Trading Room and trade securities on behalf of their clients. And in most places only individuals, not firms, could be members of Exchanges. One important consequence of this legal nature of Stock Exchanges was their frequent tendency to refuse membership in such organizations to commercial banks, which explains why, often in the past, banks could not trade on the floors of those local Exchanges, and instead had to hire the services of Exchange members to do so on their behalf.

Whenever there were distinct groups of customers, and there were externalities associated with customers becoming connected or coordinated in some fashion, platforms could increase social surplus for complex organizations such as stock exchanges. An intermediary was necessary to internalize the externalities created by one group for the other group (Evans 2004, 241-243). Despite their economic importance, multi-sided markets management has only recently received attention from economists and no attention from historians. However, it is interesting to note that brokers were managing stock exchanges as platform markets. To generate revenues that cover development and maintenance costs, the platform holder must regulate access to other goods and services within the total consumption bundle.

Rules were implemented in one way or another in all Stock Exchanges, before the First World War. Increasing volumes of trade historically required rules and government regulation. The secret for regional, national, or world financial hegemony should be related to securities settlement systems, taxes, and listing fees, but also to cultural contexts, historical traditions, and political conditions. London Stock Exchange (LSE), the largest nineteenth, managed to be notably hospitable to foreign listings (Hannah 2009, 2): “The LSE before 1914 was the global stock market: it traded a third of the world’s securities and 71 of the world’s hundred largest quoted corporations had at least one of their securities listed there” (Foreman-Peck and Hannah 2011, 5). The liberal regulations offered by European governments in the nineteenth century, such as Commercial Codes, promoted a legal convergence toward other stock markets, in Europe and America (Rojo 1977).

Stock Exchanges accompanied the evolutionary separation of ownership from control in top managerial personnel of corporations (Foreman-Peck and Hannah 2011). If economic growth requires liquid stock markets, a clear set of trading rules have contributed to that economic growth, providing protection and confidence to investors. Under weak legal systems, management discretion can be used to expropriate revenue from financiers through various means such as outright expropriation, transfer pricing or asset stripping: “Minority shareholders do not have the resources and expertise to monitor the managers and due to rational inaction, there would be too little monitoring. The presence of agency costs and the inability to implement complete contracts give the management some discretionary power” (Rathinam and Rajá 2010, 307).

If focusing on law is important, especially whenever there was a polity that supported capital markets, many finance managers have concluded that policymakers and private players built

the organizations that supported the stock markets, but they also needed sufficient political support, so that polity did not attack finance and financial groups (La Porta et al. 1998). Businesses management could devise anti-competitive strategies in multi-sided platform markets, as they were likely to be more complex and less transparent than those used in single-sided markets (Evans 2004, 239).

The success of the American economy in the twentieth century suggests high success for American stock markets, but extrapolations to European national economies may be misleading, because of the Baring crisis (in the early 1890s) and the two World Wars. Regulation followed periods of speculation: “Various bodies of literature attest to how crises significantly damage the way people relate with one another—damage that lasts long past the cessation of those crises” (Kahn, Barton and Fellows 2013, 377). The Baring crisis stimulated speculation in financial markets, and the regulation for stock markets was revised.² Note that the French 1882 crash “had led to 14 defaults among (...) brokers” in the Parisian Parquet forcing “some of their clients – mostly bankers – to loose money” particularly when two more brokers went bankrupt in the 1886 (Vueaflart) and 1888 (Bex) events, according to Hautcoeur (2010, 10). Once disturbed, relational systems underlying organizations presented dysfunctional patterns of behavior, organizational vulnerabilities, and longer-term performance problems (Kahn, Barton and Fellows 2013, 377-390).

Crises, pandemics, and wars have been and still are great causes for heterogeneous expectations for businesses. In the same way “Historical events are reflected in asset prices”, as it was

² In Portugal coming from the decrees of 8 October 1889, for example - Imprensa Nacional, *Diário do Governo*.

demonstrated for Hitler's appointment as chancellor on 30 January 1933 and for events along the World War II, even in a neutral country such as Switzerland (Frey and Kucher 2000, 468).

The main American slump, the 1929-1933 Great Depression, which was very severe, also affected the European economies. It is possible to offer interpretations of plural Stock Exchanges and Commodity Markets as a need of multiple multi-sided platform markets for matching local firms' financial needs. It has been extended to market equilibrium management in the first decade of the new millennium according to Suarez and Cusumano (2009), as "Platforms are businesses that sell products and need customers of type A to get customers of type B and vice versa. To get both sides on board, businesses operate a 'platform' that connects or coordinates multiple customers" (Evans 2004, 237-238). Additionally, regional platforms were devoted to financial regional needs. In small countries, the Great Depression drew attention to the need for a separate housing for the Commodities Market. As in other countries, in Lisbon, for example, "To give larger capacity to the public space (...) two galleries will be raised, along the two sides of the room, elegantly furnished with smooth-iron protections. The access to the galleries is provided by two staircases, discretely covered by two curtains, one for a telephone and the other for a postal telegraph station. Around the room, along the walls, there are desks for the people, to take notes, which are unavoidable in this kind of establishment" (Associação Industrial Portuguesa 1930, 64). The importance of the Exchange market at a second-ranked urban center reflects the role that such a city performed in the political scene. The existence of another Portuguese Stock Exchange in Porto, (in the northern part of the country), assured not only the survival of the capital-city market, but also the juridical background for increasing trading volumes on government debt, as well as on securities of foreign companies, operating both in the motherland and its overseas territories (Mata 2008). In general, though second-ranked urban centers' market traded volumes might be much smaller

than in the capital city, it was a fact that the presence of the Exchange was a signal of the city's political influence over the country (Azevedo 1996).³

Since the end of the World War II, Europe has been a fertile territory for experiments in centralized markets for financial instruments, including cash and derivative products, and for testing different organizational models of post-trade infra-structures used in association with those markets. The American Marshall Plan subsidies were very important for European corporations and Stock Exchanges (Mata 2010). The development of large companies in the Western World – many being huge multinationals – and the sheer size of their financial needs gave an added importance to tradability, a fact that can be gauged clearly by the recently discovered *High Frequency Trading* operations, which have been only possible with large issues (Hennart 1998).

3. The Importance of Technology for Stock Market Organization and Scale

In the domain of financial legislation, since the Treaty of Rome in 1957, Europe has evolved into a legal system that today includes several legal layers. At the national level, a corporate code, a securities code, several regulations issued by the supervisory authority, listing and trading rules defined by the Exchange. At the union level, some Directives in a frequent process of updating, and new Regulations of direct application in all the territory of the Union. Successful industrializations after the World War II also changed that situation (Maddison 2001). For example, the 1960s, and the 1970s before the first oil shock, were such busy times for stock operations that new securities codes were necessary in many countries (Amaral 2003).

³ For example, all political revolutions that have succeeded in Portugal were acclaimed in Porto, and the ones that were planned and failed were those that did not receive the support of its people (Mata 1991).

Politics could strongly affect organizational aspects of capital markets and Stock Exchanges. Wars have closed Stock Exchanges, and revolutions certainly have disturbed capital markets.⁴

The combination of democratization of savings with the sophistication of financial products and legislation, has led to an expanding use of professionals to manage present day family savings. Middle class families were able to accumulate periodic savings but have tended to use investment funds of the various types available to invest in companies. Therefore, retail investors were disappearing everywhere, even in the US.

Also, in several countries in Europe, institutional investors were controlled by banks (local or from nearby countries), which raised several questions as to the neutrality of their investment decisions. Also, the technicalities of the current financial markets have been such that it was becoming increasingly difficult for the final investor – the retailer – to be able to control those decisions efficiently and in a timely fashion.

Additionally, Stock Exchanges always need to retain some screening in the process of admitting new issues of securities to their market to guarantee some credibility which had to be paid for. But more than requiring a cash disbursement, in most countries the admission process has involved such an extensive process that it now demands from the issuer much more than a simple lump fee. It has been therefore an area of increasing specialization where the recourse to experts has been a must for all issuers of securities, including SMEs (Barnett 2011). However, these smaller corporations can hardly divert internal human power from their daily

⁴ For recent European times, the Portuguese 1974 Revolution is a good example, as the Lisbon Stock Exchange closed in April 1974 to only reopen in 1977 (Costa and Mata 2011a), with a few companies remaining listed and even fewer trading any security per day (Lisbon Stock Exchange Daily *Bulletins*, in comparison with information from Martins 1975).

operational activities, which means that inevitably they depend on banks to obtain financing (Ross, Westfield and Jaffe 2005).

Although this model prevailed long into the 21st century, during the 1980s some voices began to be heard stressing the advantages of another configuration for such Exchanges in the double sense that a fully private corporation could be more efficient in supplying the different types of services demanded by their various constituencies, instead of being a closed club, and advocating the extension of membership to include commercial banks and other financial intermediaries. In fact, commercial banks normally control a vast network of branches that can be used to deliver the Exchanges' services to a much larger part of the population, and they also have a base of capital that offers less risky conditions to deal with the very large portfolios.

Computers were very important for these aspects in Stock Exchanges. The transition from the traditional open outcry trading model to an electronic substitute was appraised in the context of the telecommunication facilities, Information Technologies (IT) improvements, market integration, and accounting standardization rules. The positive effects on Liquidity, Volatility and Cost of Capital related to scale, credibility, and shared expertise were very relevant, against the problems of adaptation to local markets and stakeholders (Karmel 2010). The appraisal must be addressed in considering the historical evidence for evolutionary illustration.

The very nature of all derivative contracts recommended that their trade between buyer and seller be followed by some guaranteeing mechanism that reduced the risk of either side defaulting before the maturity of the contract. Even the so-called traditional OTC products have been under pressure everywhere to switch to centralized markets, or at least to use clearing houses to reduce this type of risk, both for the two players and for the overall markets. Clearing Houses have been precisely the entities that complemented the liquidity service of a Derivative

Exchange by supplying that guarantee. Such were the advantages of this intermediation of a Clearing House that, currently, several traditional Stock Exchanges also have offered as a service to cash instruments with the added advantage for the owners of that centralized market that contributed greatly to the profitability of the business. The question is whether, for the needs of SMEs, it is essential to force any trades in their issued securities to also benefit from that guarantee (Duffie, Gârleanu and Pedersen 2002). Available studies prove that, thanks to mergers and acquisitions (M&A) among SMEs, value creation ownership impacts positively on performance. Bouzgarrou and Navatte (2013) investigates the role of control in acquisitions of French SMEs between 1997 and 2006, BenAmar and André (2006) studies M&A performance of Canadian SMEs between 1998 and 2002, Feito-Ruiz and Menendez-Requejo (2010) and Caprio, Croci and Del Giudice (2011) develops similar studies for the periods 1998-2008 and 2002-2004, with a sample for large European countries. Most small countries had low levels of liquidity in equity markets, due mostly to their reduced economic dimension, which translates into a small number of large domestic corporations that are listed, in parallel with insignificant foreign investors' interest in all domestic companies (Brealey 2009).

4. The Euronext Context

Paris had become the so called *Société des Bourses Françaises* only in 1988, the Amsterdam Exchanges was created in 1997, and the Brussels Exchanges was born in 1999. The Euronext was announced to the press in March 2000, and this new Group of Exchanges was created in September 2000 through the merger of the three existing national Exchanges of Paris, Amsterdam, and Brussels. Following the merger in 2000, each was renamed, respectively, Euronext Paris, Euronext Amsterdam, and Euronext Brussels. Although other moves toward integration were underway at the same time in Europe – the Nordic group of Exchanges, for example – this was a significant and rather unexpected development. Soon after, in February

2002, Lisbon also joined Euronext, along with the British Derivatives Exchange. The local organization was called *Bolsa de Valores de Lisboa e Porto (BVLPA)* and was also renamed Euronext Lisbon after its acquisition by Euronext NV. Then, and while this Euronext group of Exchanges was still digesting this idea of a single entity serving the traditional and different national markets in Europe, another innovation was proposed in 2006 by American counterparts: to merge this European group with a similar one that was then being constructed from scratch in the USA, and already covering that country from coast to coast. This transatlantic project was implemented on 4 April 2007 (Raiborn and McGinnis 2008, 65-73).

This meant that one single Holding company offered a collection of trading centers – for cash and for derivative markets – that spanned much of the globe from Western Europe to California. This was probably the most visible case, but another, parallel one emerged shortly thereafter based on the OMX Group of Exchanges, which was being created for the Nordic markets since the 1990s, but which similarly merged with the American NASDAQ company in 2007 also.

In less than 20 years, therefore, the world jumped from a model of independent companies that were designed to meet only the national trading – and after-trading – needs of investors and issuers in each individual country (only marginally were some listings received from other countries) to a model of Multinational Corporations that gave a coordinated direction to the different affiliates owned in different geographies (Gajewski and Gresse 2007). Under the strategic plan for the “Let’s Grow Together 2022”, Euronext continued pursuing the strategy of framing a leading pan-European infrastructure for stock market. The idea was to stimulate organic growth, and to hire the Nord Pool and VP Securities. In the same way the acquisition of the Borsa Italiana Group was a great impulse. The idea has been to grow thanks to geographic expansion provided by the Italian, Norwegian and Irish stock markets. The aim was to attract

the top issuing firms and governments and convince savers to invest their liquidity, making Euronext stronger and stronger. If the purpose was to support firms wanting to survive, a lot of compliance will be required, and this means that providing them a positive impact was not making Euronext stronger and stronger in the global market, even before the Covid pandemics and the Russian-Ukrainian war. This recent trend for concentration is yet short-lived experience and the importance of this innovation both suggests that some time might still be needed to properly assess those few multinational models established until now. It is also worth bearing in mind that both cross-Atlantic cases mentioned above have halted, and that no other country has undertaken to transfer its market infra-structure to any of these two multinationals.

These factors have had consequences for the average Cost of Capital for large issuers headquartered in small markets, since they could more easily tap into foreign pools of liquidity where more buyers were available to take up those large issues. In the same direction of lower costs was going the impact upon volatility, as more stability might reduce the liquidity premium demanded by investors. In the end, the question is whether this new globalized model is appropriate to respond to the very needs of the local customers, whoever they might be (La Porta et al. 1997), namely now in the Covid pandemics and the Russian-Ukrainian war times.

Membership of Exchanges has also changed considerably over the last decades. The initial model of trading members in most exchanges was of personal brokers who made a living only from the commissions they collected from sellers and buyers of securities. They could not hold positions in the securities they intermediated for their customers. Therefore, they were very much interested in attracting companies to the market and were always very eager to offer facilities to their trading clients. Membership now includes banks, which do not depend on the

trading business alone to make their profits, but also may have vested interests, both in an issue or in an issuer.

Different countries in Europe have followed different historical paths regarding the legal status of Stock Exchanges, but the recent trend has been for Exchanges to be commercial corporations owned by several stockholders, even sometimes listed on its own central market. The rationale was that management of for-profit entities tended to focus on short-term profits and to concentrate their efforts on the most profitable segments of their business. Due to the inevitable presence of economies of scale, large issuers and the most profitable instruments have been clearly targeted, leaving aside small companies or issues that produce less income. Automation of trading also facilitates this focus on large sizes. In recognizing that only about 1,500 SMEs are listed in Euro-next, and in pretending to simplify the means for making easier the access to finance equity and bonds in all stock markets, namely in Italy, it was concluded that only thanks to a STAR segment market to frame an elite network system could it be possible. (Marques 2020), using a sample of 381 (national or cross-border) M&A events, performed by 303 publicly listed non-financial SMEs, which occurred between 2005 and 2015, in 9 European countries, plus USA and Canada, extracted from the Thomson Reuters' SDC Platinum Mergers & Acquisitions Database, and historical stock performance from the Bloomberg database, finds evidence that M&A among SMEs in bad times are more inventive to explore market imperfections, as (Schumpeter 1939) suggests. The methodology of time windows made of daily 250 return observations follows (Zollo and Meier 2007) to isolate the effects of crises and other global problems. Short-term event analysis allows to control for the high-magnitude and prolonged global shocks of the new millennium. As in Brown and Warner (1985), the cross-sectional independence between daily returns was assumed, leading to the distribution of the daily 250 mean excess returns. Durbin-Watson (DW) tests for each of the 381 daily expected

returns, each one corresponding to a stock, led to conclude for no serial autocorrelation at the 1% significance level, and corroborates value creation by SMEs' business growth in exploring imperfections through M&A, more efficiently in bad times, be they signalled by crises, pandemics, or worrying. As socioemotional wealth plays a major role in SMEs, one can realize how much important is to avoid common inflection points across major markets and survey possible repercussions across regions (Berrone, Cruz and Gomez-Mejia 2012).

5. Rediscovering Small and Medium Enterprises: New Solutions Via Market Finance

Most new firms come into being when someone finds an innovative product, a new service, technology, or marketing tool that is believed to either establish a new area of business or win some market share away from the mature companies already serving those needs. It is rare that someone comes to the market to do the very same thing that is already being done.

In Europe, statistics indicate that a large percentage of innovations come from SMEs even if, in some areas such as pharmaceutical products, the size of their development labs is a fundamental determinant. According to the Office for National Statistics of UK, "Companies with less than 50 staff were responsible for 40% of live patents during 2000 to 2008, while large organizations accounted for 44% and medium-sized enterprises just 16%".⁵ The over-representation of pharmaceutical/chemical patents only confirms that advantage of small companies in the innovation arena.

On the other hand, by definition, smallness cannot benefit significantly from economies of scale (nor of experience), and so the segment of labor amongst SME companies is proportionally

⁵ See Office for National Statistics of UK: <http://www.smallbusiness.co.uk/channels/technology-in-business/news/110332/smes-drive-innovation.thtml>.

much larger than amongst large corporations. In fact, statistics corroborate this and, more importantly, while recently there has been some manpower reduction in many large companies due to the crisis, SMEs are still hiring new employees: “SMES are the backbone of all economies and are a key source of economic growth, dynamism and flexibility in advanced industrialised countries as well as in emerging and developing economies. SMEs constitute the dominant form of business organization, accounting for over 95% to 99% of enterprises They are responsible for between 60-70% net job creation in OECD countries” (OECD 2006). That is, not only do SMEs need more human labor per invested dollar, but they also keep recruiting individuals even when large enterprises (LE) are laying them off.

Another characteristic of SMEs is their inherent flexibility.⁶ Because they are small, and therefore have less resistance to change – or because they are still in their infancy, and therefore expected to reveal adaptation, SMEs rarely are rigid. In a world where geopolitics tend to change with increasing speed and in violent swings, flexible economies are better able to exploit new opportunities than “lazy” economies (Högbom and Wagenius 2011).

Large firms are not the only paradigm for an economy. Moreover, they are abandoning Russian endeavors. SMEs exist in any economy in much larger numbers than LEs, and their shares in the labor force and innovations are greater than in mature companies. In emerging economies, as well as in small countries, the failure of one SME has much less impact to the respective society than the failure of an LE. Crucially, they are also much more adaptable to market evolution, both individually and as a group, which makes them large net contributors to economic growth in catching-up processes, in the perspective of global modernization. In

⁶ As the European Commission site on Innovation and SMEs states:
<http://ec.europa.eu/research/sme/leaflets/en/intro02.html>.

Europe (EU-27), the contribution of SMEs to the whole set of enterprises was 99.8% in numbers, 67.4% of the overall employment and 58.1% of the gross value added, according to the *Annual report on small and medium-sized enterprises in the EU, 2012*.

Although with important differences amongst the many countries comprising the European Union (EU), the pre-Covid and pre-Russian war panorama on the continent was of a strong shortage of financing that was made available to Small and Medium Enterprise (SME) working there, with great consequences on the growth of the member states' GDPs and to the number of Europeans unemployed everywhere (La Porta, 1999). Political and geopolitical uncertainty is always a source of heterogeneous outcomes throughout national economies in the world. Military threat and wars are significant sources of business trouble. These financing difficulties felt by SMEs were not new in Europe, but the current effects of the 2012 crisis, the pandemics, the Russian-Ukrainian war, and the accompanying credit crunch due to the balance sheet problems within the local bank industry highlight the poor situation more than before, as these matters were becoming critical to the economic recovery of many European countries, moreover now, after so great shocks. It is unlikely that the crunch will disappear in Europe in the short run, as most resident banks are undergoing a long process of structural change resulting from the various decisions taken by the G-20 group to strengthen their balance sheets and liquidity postures. Funding allocation to warrying, humanitarian support to displaced people, and reconstruction needs, sum up to inflationary pressure. However, and in spite of their smaller size, SMEs face the very same financial needs as LEs: on one hand, they must fund their fixed assets (plus their net working capital) with relatively stable forms of capital – equity and long-term loans – but on the other hand, they need to maintain permanent access to short-term funding to run the daily business of buying inputs, paying labor, granting credit to clients, etc. until they are covered by their sales (Amihud and Mendelson 1986).

Probably, new financial solutions must be invented to better cope with the special needs of these innovative SMEs (Högbom and Wagenius 2011). Several hybrid instruments are known that mix features of shares with those of bonds, but some improvements may not only make them more visible to potential issuers and investors, but also adapt them to the special requirements of highly vulnerable enterprises. Taxation is clearly an example of a consequence, as savings are now heavily penalized when put to work in any investment – capital gains tax, and taxes on dividends. Also, greater profitability sometimes pays higher taxes, and the Tobin tax that has been announced may have profound consequences. Although a very same crisis has affected the US economy, there are significant differences between the US and Western Europe regarding the way savings have been organized and channeled into productive use in the corporate fabric. Additionally, the US Government enacted the Jumpstart Our Business Startups Act or JOBS Act in 2010 precisely to foster the mechanisms to finance all segments of their corporations. The JOBS Act was a law intended to encourage funding of United States small businesses by easing various securities regulations. Signed into law by President Barack Obama on April 5, 2012, who had unveiled the Startup America Initiative on January 31, 2011, it came to recommend different reforms aimed at increasing small businesses' ability to raise capital over the course of a year.

Europe led a movement where all Stock Exchanges progressively changed their status from closed Associations of Stockbrokers to open Incorporated Firms whose shares were offered to the public for investment. This implied a clear differentiation between the trading privileges of Exchange members and the ownership rights of shareholders, even if some members could take on both capacities (Hilt 2008). Some Exchanges even went a step further and listed their issued capital in some centralized markets. This listing of the shares of a Stock Exchange in its own market may raise the question of a potential conflict of interests: who, inside the Exchange

organization is sufficiently independent to decide any measure against this issuer – suspension of trading, delisting – if such case were to arise?

Of course, this movement did not alter the main goal of a Stock Exchange – to provide trading facilities – although in most places a few other services were added to better serve their clientele (Costa and Mata 2011b). A for-profit organization needs to search unceasingly for new business to increase the annual profits paid to its capital, and so cannot assume a passive attitude toward the market, as was the tradition in the earlier days of those Associations of Stockbrokers. This proactive position was also reinforced by their merger with Derivative Exchanges, where an aggressive attitude has always been a precondition of survival according to Brown, Goetzman and Ross (1995). Despite the rationale for these concentration movements – cost reductions and added liquidity – in all cases the single central markets became in the end very distant from the local communities precisely where many of SMEs were and are still headquartered. Consequently, these isolated companies face amplified difficulties when planning to issue new shares and/or bonds and subsequently when applying for admission to trading on any distant Exchange.

There is also a daunting Financial Gap for SMEs. This difficulty comes partly from the very small size of these firms and the restricted amounts of shares and/or bonds they issue precisely when Stock exchanges are quickly changing in response to pressure of the economies of scale imposed by the sheer size of the securities issues listed by LEs, especially large multinationals. SMEs also dislike the transparency required to tap any capital market. More recently, a regulatory barrier to entry has been erected in front of SMEs as the number of laws and regulations to comply with is mushrooming every year and almost everywhere. Additionally, all new laws, codes, and regulations are published with more and greater requirements



regarding the issuing companies. With regional Exchanges and principally with local ones, the admission process was much simpler, in part because the world was then also simpler and because the Exchange listing officials naturally knew the applicant corporation and so did not need to demand all the documents and prospectuses that distant issuers must provide. Moreover, privatization of Exchanges has also made it necessary to introduce a new layer of bureaucracy: a state organized Supervisor and Regulator to oversee the daily operation of those centralized markets and to establish permanently updated regulations to discipline the entire capital market. This is a new source of costs to be paid both by issuers and the final investor, increasing the average cost of capital.

Several initiatives have been devised in different spheres in Europe, but the structural reason behind those constraints and the multidimensional origin of them requires an integrated approach. Part of the reason came from the cultural background informing overall politics, along with the design of legislation in most European countries. But part also derived from the tremendous evolution that capital markets have demonstrated everywhere since the end of World War II, which was mainly driven by the needs of the large (powerful and influential) European and multinational corporations. Stock Exchanges, where liquidity might be searched for by issuers and investors have changed from small local organizations to large multinational entities that tend to focus on the much more profitable business brought about by large issuers and by the attached derivative markets. SMEs have tended to leave Stock exchanges, while some recent decisions remember a move to past organizational aspects, preventing that a huge corporation may manage largely merged Stock Exchanges throughout the world (Costa and Mata 2011b). The Australian authorities refused the merger of the Australian Stock exchange with Singapore's. The London proposal to buy Toronto's Stock Exchanges failed. The European authorities also refused the project of merging the NYSE Euronext with the *Deustsch*

Boerse. Several innovative Brazilian Stock Exchanges are competing with the large BOVESPA. Liverpool's entrepreneurs have tried to reopen this British Stock exchange, the last one to be closed in the 1970s. There is a plan for a spin off between the Intercontinental Exchange and the European part of Euronext (Paris, Brussels, Lisbon, and Amsterdam). As there is a widespread understanding that strong financial markets can drive economic development, the organizational interactions between politics and the juridical background can gain valuable insight into economic growth engineering for supporting the current retake of activities after confinements and warrying in the world, in fuelling funding beyond bank credit (Roe 2006, 1-2).

It is recognized that issuers need to be supported along the transition to the environmental social governance. However, it is never explained how to deal with non-financial disclosure requirements, even for firms issuing for a sustainable environmental transition, because not all firms can have science-based targets in a near future to become coveted by savers and stock-market investors.

6. Reflections, forecasts and conclusions

Examining the organizational features of equity markets throughout European countries' history is of interest for this deglobalizing world. Capital Markets in most (if not all) countries experienced a profound organizational revolution during most of the twentieth century in the wake of the tremendous evolution in technologies and in the reduction of the obstacles presented by the different country borders to ideas, persons and financial capital. "Routines, as collective accomplishments, are (re)created from within" (Dionysiou and Tsoukas 2013, 181). Stock Exchanges accompanied a historical evolution and experienced an even more substantial transformation in several core characteristics of their features: merger between many such

organizations, ownership, has extended membership to institutional intermediaries and to commercial banks, trading mechanisms, legal and regulatory framework, risk management, and fragmentation of the secondary market.

The economics of multi-sided platform markets brings to light a novel understanding of some stock-market organizational aspects (Barnett 2011). Political reasons must also be included to explain the close convergence of organizational features among countries. For most countries, joining the European Union brought a new credibility to the future, which led to a progressive opening of borders to financial investment from abroad, as national markets were so limited in size that even small influxes of cash fueled discussions on the organizational background. Not negating the many advantages gained so far from the recent historical evolution, in various geographies the various stakeholders interested in Stock Exchanges are developing studies to assess the pros and cons of stepping back in some organizational respects to respond to the various market needs. The rapid recent evolution, the Covid pandemics, and the Russian-Ukrainian war seem to indicate that the world may have gone too far from the old model. Symptoms of this excess appear in the increasing difficulties faced by SME companies to use these facilities to raise money for their investments and their operations, because of the increasing divorce from local markets on the part of the very big groups of Exchanges, and the enhanced level of systemic risk brought about by these highly interdependent organizations. It is central to re-evaluate the different historic models used in the past to develop a new solution that might allow to benefit from both the new technologies and lack of restrictions with the advantage of “smallness” and “locality”. Examples of such areas of re-assessment are the legal regulatory organizational complexification to be closer to the much simpler form of the past, the level of integration between the different poles within the same group of Exchanges, the type of competition between Exchanges and the new forms of centralized markets, membership

of Exchanges and the role to be played by banks. History is a central source of data to guide these efforts to redesign the organized markets of the future geopolitical landscape.

Small markets may benefit from the capital capacities and the accumulated expertise that the intermediaries headquartered in more mature markets may bring to the domestic market. This is particularly important for those countries where financial intermediaries did not have the tradition of being market makers in the securities market. Also, in most of Western Europe, and for a long time now, there has been a clear predominance of the banking channel in this role of funding corporations – either large or small – making most non-financial firms (and almost all SMEs) critically dependent on bank credit.

The financing difficulties felt by SMEs are not new in Europe, but the current crisis and the accompanying credit crunch due to the balance sheet problems within the local bank industry has highlighted it more in this corona virus pandemic than before as it has become critical to the necessary economic recovery in many European countries. Additionally, Stock Exchanges in most of Europe are products of a long process of amalgamation between tiny local markets into regional ones, subsequently to national Exchanges. More recently some of them have merged into very large multinationals with operations on both sides of the Atlantic, while geopolitical alliances will dictate how to allocate funding to the armament sector to stop predatory threat and military clash.

In the past, information flowed much more efficiently and naturally within a local community, which made it unnecessary to legislate so extensively upon the type, quality, and frequency of information disclosure, which became necessary for situations in which issuers and investors lived in geographically and culturally distant worlds. If more foreign members can easily and directly access other domestic markets via their electronic connection to the same central

computer, then more interested parties observed domestic share and bond issues. This naturally led to larger local trading volumes, which helped to reduce price jumps resulting from larger orders – both of which were crucial variables for the recovery of small domestic markets. Legal origins and framework have affected finance, but new geopolitical variables and globalization versus deglobalization will dictate the tools to build markets and advance economically.

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