

Global Capital Markets - An Updated Profile

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Summary: More than two decades after the beginning of the financial revolution, globalization of capital flows still attracts considerable attention, from both practitioners and academics. The aim of this paper is to contribute to understanding of some aspects of the global capital scene, as well as to emphasise certain developments which might illustrate its changing profile. Several fundamental perspectives profile the global capital market. A quantitative review provides a sense of sheer volumes, trends, origins and destinations of capital flows; an assessment of the global capital market's degree of integration follows. The emergence of new (types of) actors is another important aspect of the global processes, while illustrations of new market products and emerging segments may add new perspectives on the profile of the global capital market. Finally, the paper concludes with a brief overview of digitalisation of the financial supply chain.

Key words: Capital markets, Innovation, Electronic trading

JEL: F21, G15

Introduction

Since the 1970s and particularly the 1980s, global financial flows have attracted increasing attention of both practitioners and theorists from various domains of practice and theory. Practitioners have had many faces (private, business, governmental, institutional), attitudes and even a wider variety of motives to take part in what was called the financial revolution. Theoretical views and analyses have also had various doctrinal origins and scopes of application: from economics to telecommunications, politics, sociology, management, etc. More than two decades after the beginning of the financial revolution, the attention has not subsided--to the contrary, it has widened from many aspects. One cannot comprehend each and every reason behind this widened attention, but it is worth at least identifying and grouping some factors that constantly affect global capital markets. Although such a selection of factors and indicators is inevitably deficient (bearing in mind the attribute "global"), it might prove useful in portraying long-term trends and outcomes of capital flows on the world scale.

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Assuming that a modern capital market presents a conglomerate of specialized markets for long-term financial assets--as well as a complex of institutions, mechanisms and instruments--a global capital market refers to the operations, mechanisms and processes within an integral whole. We may also describe the latter as a combination of international elements (usually referred to as cross-border or open border, depending on the analyst's contra- or pro-globalization stand) and transnational elements (sometimes called transborder transactions, like transworld banking or transworld securities, where distances and borders are irrelevant)¹, with a strong degree of integration between the different national parts. Further theorizing aside, the above descriptions are necessary in order to clarify the basic assumption: a profile of such a world phenomenon cannot rely solely on numbers, but must include other aspects as well. Nevertheless, this paper does not address the politics of global capital at great length, so the terms global, international and transnational are used interchangeably.

This paper profiles the global capital market from several fundamental perspectives. A quantitative review provides a sense of sheer volumes, trends, origins and destinations of capital flows; an assessment of the global capital market's degree of integration follows. A few examples of new (types of) actors portray a changing scene of the global processes, while illustrations of new market products and emerging segments may add new perspectives on the profile of the global capital market. Finally, the paper concludes with a brief overview of selected developments in the field of technology that may soon change the profile itself (by changing some motives for globalization).

1. Economic scene

Technological innovations and rapid information flows have fostered a dramatic globalization of capital flows since 1995. A sharp increase in total savings aided this process, as--due to better information and, hence, wider choice--savings are channelled into financial instruments across borders. The standard view of financial markets' role--to allow a continuous mutation of assets (usually linked to national categories such as savings, investments, etc.) in search of improved results--has changed for good.

¹ For details on globalization in finance, see: Baylis, J. and Smith, S. (eds)

Table 1. The world economy and finance, 2005 (US\$ trillion)

GDP	44.4
Total reserves	4.2
Stock market capitalization	37.2
Total debt securities, of which:	58.9
- public	23
- private	35.9
Bank assets	55.7

Source: Global Financial Stability Report (IMF, 2006)

In 2003, the value of the world's financial assets (including stocks, bonds, and other instruments) was estimated at more than \$119 trillion, and it is expected to reach \$210 trillion by end of the decade. The value of the world's financial assets has exceeded global GDP by a factor of three, pointing to an unprecedented degree of financial depth that largely bodes well for the world's economies. Deeper financial markets promote a more efficient allocation of capital and risk because such financial markets offer households and businesses more choices for investing savings and raising capital, respectively.

Table 2. Global financial assets 2003 – value and growth

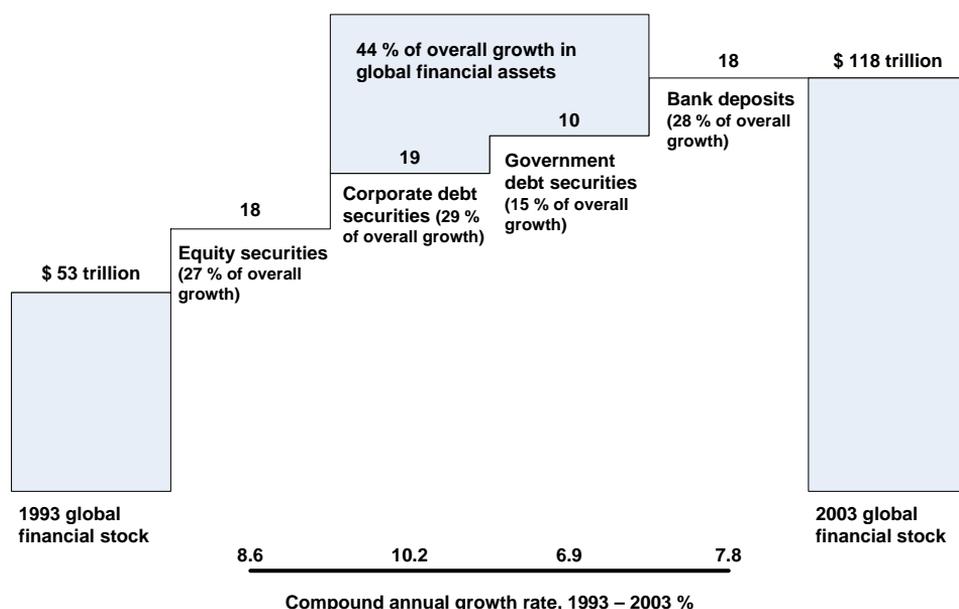
Asset classes – Country of origin	Outstanding value (trillion US\$)	Annual growth rate 1993-2003
Total	119	8.4% (3.3 times GDP)
Banking deposits	33.6	7.8%
Govern. Bonds	21.2	5.9%
Corporate bonds	31.5	10.2%
Equity	33.1	8.6%
USA	44	8.6% (4 times GDP)
Euro zone	26	9.8% (3.1 times GDP)
United Kingdom	7	11.3% (3.9 times GDP)
Eastern Europe	1	19.3% (1.0 times GDP)
Japan	18	4% (4.1 times GDP)
China	5	14.5% (3.2 times GDP)
India	1	11.9% (1.4 times GDP)

Source: McKinsey Global Institute. Available from: [www.mckinseyquarterly.com]

At the end of 2003, banking deposits and equity represented the two largest parts of the outstanding value of global financial assets. In the period

1993-2003, corporate bonds recorded the fastest growth, at an annual rate of over 10%, followed by equities. By far, government bonds recorded the lowest rate of growth, and their share declined throughout the period.

Picture 1. Contribution to growth by asset class, 1993-2003 (US\$ trillion)



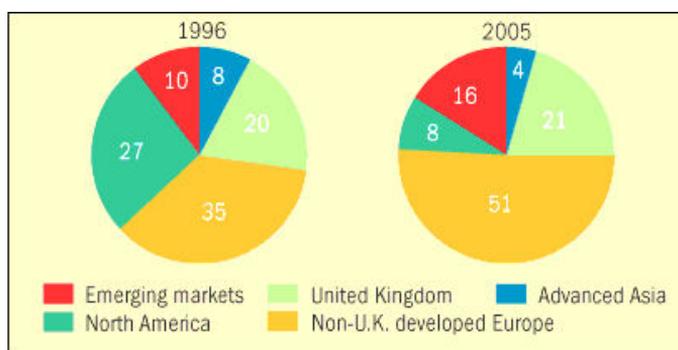
Source: McKinsey Global Institute. Available from: [www.mckinseyquarterly.com]

Pertaining to the structure of origin, the US remains the largest holder (over two-fifths) of the total outstanding value of global financial assets, but its share declined slightly in the period 1993-2003. The fastest growth according to capital origin occurred in Eastern Europe and China, taking into account a very modest basis in those countries. Europe's adoption of the Euro as a common currency has fuelled rapid growth in intra-European flows; also, the EU15 countries have provided large amounts of finance to new members of the EU. Thanks to the large current account surpluses of Asia and oil-exporting countries, emerging market countries' shares--though they remain a relatively small share of the overall capital flows--have grown significantly. Corporate debt markets have recorded particularly strong growth while government debt still dominates emerging financial markets for debt instruments. From both public and private sources, capital outflows from emerging economies (mainly those from Asia), have grown a strong appetite for US treasury bonds: estimates of foreign private and public holdings of the US debt amounted to almost \$3 trillion in 2005².

² Goswani, M. et al, p. 14.

The roles that countries and regions play in the global capital market are changing. While the United States remains the largest financial market, the Euro zone has emerged as a new financial leader. The degree of concentration has not drastically changed, but the capital origin of the market's top tier has: combined, the Euro zone, the United Kingdom and the United States account for about 80% of all cross-border capital flows. By contrast, Japan is strikingly isolated: its capital flows are lower even than those originating from China, although China's stock of financial assets is only one-quarter the size of those from Japan.

Picture 2. *Global capital outflows (%)*



Source: Finance and Development, March 2007

An IMF analysis³ presents the most recent picture of global capital flows and assets: Japan, China and Germany are the leading net exporters of capital (their combined share is over one third of global capital flows in 2005), while the US alone accounts for nearly two thirds of the overall imported capital in 2005.

After equity market turmoil in major market centres between 1998 and 2001, equity price indices stabilised by the end of 2005; stability significantly contributed to a growing interest of both issuers and buyers worldwide. Nevertheless, US equities were the most desired product in 2005--foreign investors bought \$908 billion worth of American equities (in comparison, in 1988, foreigners invested 'only' \$187 billion in buying US stocks). Notably, in 2005, the UK economy's rating with foreign investors significantly improved, and investors poured in \$164 billion of direct investments; at the same time the entire Euro zone received \$94.5 billion and the US \$109.8 received billion of direct investment. US equity markets' attractiveness is clear from another perspective: the US share of 2005 world stock market capitalization was 45.7%, while the EU lagged far behind with a share of 25.7%.

³ Global Financial Stability Report

Growth in global over-the-counter derivatives markets represents another major aspect of a global financial outlook, highlighting intensive efforts to improve risk management. In December 2005, the total notional amount of various derivatives exceeded \$284 trillion, with the gross market value standing at over \$9 trillion. In comparison to the figures at the end of 2003, the markets exhibited growth of 44% and 43% respectively. Analysing the structural composition of all derivative types, interest rate derivatives (forward rate arrangements, swaps and options) accounted for three quarters of the total notional amounts and 60% of the gross market value. Commodity and equity-linked instruments were far less attractive, but their trading profiles indicate significant growth. Asia recorded particularly strong expansion of derivatives instruments, where trading volume of derivatives was 6 times larger in 2005 than in 2000.⁴

In comparison, currency composition of the global capital market underwent less dramatic but evident changes: in 2003, the US dollar lost its dominant position to the Euro. In 2005, 38% of all international debt securities were denominated in US dollars while 45% were denominated in Euros.

A steady increase of debt--especially corporate debt--will likely continue, in future overtaking bank deposits and equity, thus further changing the profile of the global capital market. Contemplating future numbers, estimates indicate⁵ that by 2010, global capital assets will comprise about \$60 trillion worth of corporate debt securities (double the value in 2003), \$59 trillion of bank deposits, about \$57 trillion of equity and about \$30 trillion of government debt (an over 50% increase on the value in 2003).

2. Degree of integration

While quantitative data can indeed paint a picture of how the world is integrated through capital--particularly considering international flows and cross-border holdings--other approaches can contribute to a complete assessment of the degree of capital market integration.

As noted, a global market implies a systemic integration of various parts and flows. Cross-border flows link national capital markets to foreign capital markets while, through transnational flows, capital markets increasingly become parts of the global capital hierarchy. From another perspective, global capital is increasingly expanding beyond traditional (or academically devised) demarcation lines between short and long-term financial assets, investment and commercial banking, specialized instruments, etc. In this way, one can also consider the degree of the global capital market's integration within the world's financial

⁴ Global Financial Stability Report, Proceedings from the IOMA-IOCA Annual Conference - Lisbon 15-17 May 2006

⁵ Farrell, D et al: *Mapping the global capital markets*

market. Nevertheless, the world's finance has yet to attain a seamlessly unified market place, and regional aspects develop additional outlooks when assessing global capital integration. Finally, addressing incriminations that, long ago, the nascent global capital market diverged with underlying economic trends, some recent examples may reveal integration ties that still function between the global capital and the global economy.

A strikingly helpful example of the level of capital markets' integration on the global scale musters the priorities set out by a leading international regulator of capital markets world wide. The International Organization of Securities Commissions (IOSCO) seeks to enable members to exchange information in order to develop securities markets and improve their efficiency, to coordinate the enforcement of securities regulation and to implement common standards. In 2005, IOSCO members agreed to a set of priorities, the first one being maintaining the organization's status as the global (and international) standard setter:

*"Its (IOSCO) current position must be maintained by constant work to upgrade the IOSCO Principles to take into account emerging regulatory issues and to protect this key international standard setting responsibility"*⁶.

In addition, the priorities include improving enforcement related to cross-border co-operation in preventing and penalizing financial 'wrongdoings', by endorsing an international benchmark and rigorous practical instruments for such transgressions. Furthermore, implementation of these standards (in conjunction with other regulatory principles set out by the organization) both within and outside the IOSCO membership by 2010 is vital. Considering that the IOSCO membership (top regulators of national securities markets) covers almost 90% of the world capital market and assuming that regulators most frequently react *ex post facto*, one might conclude that the capital market has indeed become global to a great extent.

Another illustrative example of the global capital market's integration level--both within the world's finance and with the global economy--is a program devised and conducted by two institutions not primarily related to the operations of securities markets, the IMF and the World Bank. The Financial Sector Assessment Program (FSAP) was developed to help strengthen financial systems in the context of the IMF's bilateral surveillance and the World Bank's Financial Sector development work. FSAP was launched in 1999, and it underwent a third program revision in 2005. This undertaking was devised to assist policy-makers globally as they focus on financial system stability and development as a single key area, considering growing evidence of how and to what extent financial markets can (positively and negatively) affect economic growth.

⁶ Resolution of the President Committee on IOSCO's Operational Priorities, p. 1 (2005), www.iosco.org

“This focus also reflects the recognition that close two-way linkages between financial sector soundness and performance, on the one hand, and macroeconomic and real sector developments, on the other hand, need to be considered when designing macroeconomic and financial policies”⁷.

Jointly with numerous multilateral organizations, national authorities and international standard-setters; the IMF and the World Bank seek to improve financial system soundness and developments, to define the linkages between the financial sector and the macro economy, to assess the effectiveness of various aspects of monetary and financial policies and to promote convergence of the key financial policy areas. The latter primarily refers to prudential, effective and consolidated supervision of all categories of traditional financial actors (such as banks, securities houses, insurance companies, non-financial actors, etc.) and to a new definition of cross-sectoral and cross-border actors termed ‘large and complex financial institutions’ (LCFI).

Concerning the global capital market, FSAP identified three key topics in securities market regulation and its worldwide development: demutualization of stock exchanges (a transformation of mutual/membership organization towards for-profit organization), creation of integrated regulators or supervisors (national regulators joining international regulatory bodies with even wider scope and mandate) and the enforcement and exchange of information among regulators. Detailed analysis aside, these three topics alone help explain the global capital market’s level of integration. National markets (e.g., stock exchanges) must cope with increasing global competition. Cross-sectoral globalization of financial businesses calls for adequate responses at the intergovernmental level, in the form of new regulatory bodies and various ‘memoranda of understanding’ between national authorities.

Another recent development may also indicate the level of capital integration and the attention it draws worldwide. In March 2007, the IMF announced a major step in its financial supervision of the global economy: a revised set of standardized indicators for assessing the soundness of banking sectors of 50 countries (also including insurance companies, pension funds and securities markets)⁸.

Finally, a brief survey of the links developed and maintained by one of the leading actors in the world of global capital--the World Federation of Exchanges (WFE)--develops additional perspective on the level of global capital integration. Like most other major actors, WFE maintains links on the global financial market place, within other policy domains, with different types of ac-

⁷ “Financial Sector Assessments: Overall Framework and Executive Summary”, p. 1. For more details, see www.imf.org/external/np/fsap/fsap.asp

⁸ Details are available at: www.imf.org/external/np/sta/fsi/eng/cce/index.htm

tors, etc. At both operational and strategic levels, WFE relies on regular contact with expert bodies to help construct policies and priorities, including: the International Organization of Securities Commissions (IOSCO), representing the government agencies supervising financial markets; the International Options Market Association (IOMA), along with selected futures markets and clearing houses; and the Consultative Group of the International Accounting Standards Board (IAS). The Federation also maintains close contact with regional organizations of exchanges, such as ASEA (African Stock Exchanges Association), EAOSEF (East Asian and Oceanic Stock Exchanges Federation), FESE (Federation of European Security Exchanges), etc. At the national level, WFE retains business relations with regulatory agencies, central banks and ministries of economics or finance, as may be necessary for helping its members. The Federation takes part in meetings under the auspices of the OECD, the World Bank and its International Finance Corporation (IFC) subsidiary.

The WFE Secretariat regularly consults with the International Bar Association's Section on Business Law (IBA-SBL), the International Federation of Accountants (IFAC), the International Chamber of Commerce (ICC) and the International Standards Organization (ISO).

3. Changing actors

Compared with regulators, capital market actors reacted faster to changing needs, environments and trends. Without attempting to present here a comprehensive overview of changes related to major types of actors, a few examples may prove illustrative enough.

Firstly, a new type of multinational actor has emerged on the global capital market place, through mergers of stock exchanges from different countries, bilateral and multilateral agreements on cooperation, alliances, etc. Formation of such multijurisdictional groups has been primarily driven by forces to diversify, increase effectiveness and efficiency, make better use of IT platforms, etc. Nevertheless, the endless searches for "regulation-friendly" environments--or the use of benefits arising from specific regulatory competition worldwide--play a significant part in the creation of such groups.

The most recent example in this field is the transatlantic merger between the New York Stock Exchange Group, one of the world's largest equities exchanges, and Euronext, Europe's leading multinational exchange. In April 2007, the deal created NYSE Euronext, encompassing seven exchanges from six countries. Although large multinational actors exist for many decades, one cannot appreciate this new type of financial market actor without referring to numbers. Average daily turnover in April 2007 at NYSE Euronext amounted to \$120 billion (more than double that of its nearest rival, NASDAQ), while combined

market capitalization approached \$25 trillion (six times higher than the Tokyo Stock Exchange, the second market in the world by market capitalization).

NYSE Euronext might be viewed as a prototype or precursor of future actors new to the global capital market: large, complex, far-reaching, cost-effective and, most importantly, based in different regulatory environments⁹. Like NYSE Euronext, new actors can anticipate providing cross-border products and international listings; creating new capital market instruments (e.g., combining fixed income and equity, EFTs); offering and executing operations in multiple currencies and time zones; and above all, allowing easy, fast and cost-effective access to capital. Competitive pressures will motivate mergers targeting more efficient operations and increasing attention to economies of scale, consequently creating room for investment--by exchanges themselves--into innovative products, value-added information and other services tailor-made to their clients.

OMX is another example of fresh actors in Europe. By all measures, signals indicate that the merger of seven national exchanges¹⁰ from Nordic and Baltic countries into OMX was necessary to achieve a critical mass, to become more efficient and to reduce costs. Created in 2003, OMX today owns and operates the largest integrated securities marketplace in Northern Europe. In addition to securities, OMX provides technology solutions for financial and energy markets worldwide. OMX technology solutions span the entire transaction chain, enabling exchanges, marketplaces, clearing organizations, central securities depositories and other financial participants to achieve optimum efficiency and innovation. OMX conducts operations in numerous countries in Europe, Asia and in the US.

At the beginning of 2007, OMX market capitalization (excluding investment funds) was \$1.152 billion (representing a twelve-month increase of 32% in dollar terms); over 800 companies and 5,000 bonds were listed on OMX (the highest growth in Europe). Reflecting the new business orientation of modern stock exchanges, OMX's own shares are listed on four European exchanges.

Secondly, another type of actor has been entering the global capital market place: fast-growing actors. Capital market actors from Asia have been particularly assertive in finding their place at the global market--not surprising, bearing in mind tremendous capital needs of the regional fast-track economies. Stock exchanges in Shanghai and Shenzhen (and partially, the Hong Kong Stock Exchange) have recorded growth in all major aspects of their businesses (e.g. domestic market capitalization, share trading values, bond trading values, number of listed companies, etc.) several times higher than growth of 'traditionally' significant exchanges, such as the London SE or the NYSE Group. In the period

⁹ More details on the merger are available at www.euronext.com and www.nyse.com.

¹⁰ They include Copenhagen, Helsinki, Iceland, Riga, Stockholm, Tallinn and Vilnius Stock Exchanges.

February 2006-February 2007, for example, the Shanghai SE (founded in 1990) recorded a rise of domestic market capitalization of 260% (\$1.142 billion), an increase of 560% in share trading values, and the number of share trades topped 100 million (surpassed only by NYSE Group and NASDAQ)¹¹.

Thirdly, intensive transnational linking and actors' changed organizational structures and strategies forced regulators to seek new definitions of global actors. Coming to terms with the reality of modern capital flows unbounded by territorial or market segmentations, national and international regulators have changed their focus slightly from origins to operations. Such new actors' activities raise (cross-sectoral and cross-border transfer of financial risk) issues especially relevant to a comprehensive assessment of the strengths, weaknesses and supervision of financial systems. A large and complex financial institution (LCFI) is likely to embody specific characteristics¹². Such an actor is a significant player in both wholesale and retail, regional or global, financial markets with substantial international operations. A group of actors usually form an LCFI and may headquarter in a country of origin, or may be based abroad with significant local presence in the form of branches or locally incorporated subsidiaries (perhaps including local holding companies). The legal form of an LCFI's local presence may present important regulatory implications, thus allowing the LCFI to exploit regulatory differences and to rapidly adapt to local circumstances. An LCFI's international and domestic financial activities include: commercial banking and other lending (such as credit origination and securitization); securities trading, dealing and underwriting, mergers and acquisitions, and other capital market activity; life and general insurance, as well as custody and asset management. In some cases, the operations of the wider group may include significant industrial and other nonfinancial activities.

In comparison to 'traditional' global capital market actors, an LCFI possesses certain additional features such as prominence in the local payments, clearing and settlements structures. To realize its primary motives--and as a consequence of its characteristics--an LCFI's liabilities reflect very diverse sources of local and cross-border funding and reserves, while its assets include a full range of marketable and nonmarketable financial instruments held locally and abroad. Likely, off-balance sheet items are particularly important, because they reflect complex funding, as well as hedging and speculative trading strategies. Of course, both over-the-counter (OTC) markets and organized exchanges exhibit these strategies. Despite many changes in LCFIs, compared to market actors, some features seem permanent: an LCFI likely comprises many different

¹¹ From: FIBV Focus, March 2007 (World Federation of Stock Exchanges, Paris)

¹² Financial Sector Assessment: A Handbook, p. 124

legal entities, and the link between those entities and its internal management structure may appear complicated or even opaque.

Changes are also evident among the most ‘traditional’ actors on the global capital market--stock exchanges. Their transformation most often includes: opening up to foreign members (European stock exchanges, in particular), introducing electronic trade systems and changing their business nature through demutualization. Mutual or member organizations founded many stock exchanges; an individual or a securities firm, on the one hand, earned certain benefits (including rights to trade on the exchange and to establish a market in certain securities), and on the other hand, certain responsibilities (including obligations to act in accordance with membership rules to benefit the entire organization). This system worked effectively for many decades and, indeed, many argue it still does. Others, however, believe that such structures constrain the exchanges and prevent them from competing effectively with rivals. Fast, efficient electronic systems that execute trades rapidly at little cost are particularly competitive rivals.

As exchanges needed greater resources to increase their competitive standing, a significant number of them decided to transform themselves into for-profit stock companies. They offered shares to the public and even listed on the exchange itself. In a number of cases, government authorities initiated the demutualization of domestic exchanges, believing it would improve the competitiveness and efficiency of the markets. According to the World Federation of Exchanges, as of March 2003, a total of 42 exchanges had demutualized. This figure encompasses exchanges in both developed and emerging markets, including, naming a few, the London Stock Exchange, Australian Stock Exchange, Deutsche Boerse, Athens Stock Exchange, Philippines Stock Exchange and Kuala Lumpur Stock Exchange.

The transformation of stock exchanges into for-profit share companies changes the modes of capital market operations and raises significant issues for securities regulators. Although many of the issues exist in the case of traditional stock exchanges, demutualization highlights potential conflicts of interest. Primarily, their regulatory functions (including the administration of their own operating rules) may be jeopardized, neglected or misused. Regulators handle such potential conflicts in a variety of ways. Some regulators have removed regulation from the exchange function entirely, giving it to an independent self-regulatory organization, or even assuming all or part of the functions themselves. Others consider improving internal controls at the exchange through enhanced regulatory oversight or strengthened corporate governance sufficient.

As a consequence of both technological advances and increasing competition in all functioning segments of the global capital market, new actors have appeared on the scene. One example of how financial market participants can also join forces in dealing with non-monetary issues is the Giovaninni Group: a group of financial market participants formed in 1996 and chaired by Alberto

Giovaninni (advisor to the EU Commission). The group engaged extensively in analyzing barriers to the efficient clearing and settlement of securities cross-border transactions among EU member states. The Giovaninni Group published two reports (in 2001 and 2003) on the removal of barriers; recommending the elimination of differences in information technology (Barrier One), other interfaces, national differences in securities issuance practices, etc. The group established a deadline of 2011 for all the actors to comply with the Barrier One Protocol.

Despite various business strategies and regional differences that may affect attributes of major actors on the global capital market, three cornerstones construct a new profile of the actors. Firstly, there is a trend toward operating 'own marketplaces' through mergers and acquisitions, cross-sectoral diversification, technological linking and platform integration, or at least long-term cooperation agreements. By operating and integrating organizations and market segments, new actors gain scale, knowledge and experience to facilitate efficient trading and develop technology solutions. Secondly, all major actors on the global capital market invest heavily in developing cutting-edge technology. This enables secure and efficient handling of huge transaction volumes, consistently reduces response times and permanently adds value to information provided to customers. Thirdly, a proliferating global customer base expands to almost all types of financial market participants--from small, individual investors and retail customers, to the world's largest companies and international financial organizations.

4. Product innovation and development

It is difficult (and theoretically, perhaps, unnecessary) to conclude either if capital markets' globalization leads to their innovation, or if a continuous product development is one of the prerequisites for cross-border flows to intensify on a global scale. Regardless, innovation and development of capital market products are no longer considered breakthrough events. They have evolved into a permanent process, sometimes complementing (reactive attitude) and sometimes fueling (proactive attitude) capital globalization.

One particular feature of many developed countries (and markets) is population aging. As the generation of the 1950s approaches retirement, a new set of financial products are slowly being developed and introduced to the market. This came as a result of the search for better yields and secure investments in the distant future, fiscal sustainability threats, as well as pending pension and health care reforms in numerous countries. The weak position of many pension funds highlighted the need to secure financial resources and improve risk management. Under such conditions, governments began considering appropriate ways of sharing risk between the public, private and household sectors. Long-term bonds (30 years plus), inflation-linked bonds, reverse mortgages (a "rising

debt, falling equity" type of arrangement for "selling" property and receiving cash over a long-term period), and various types of annuities represent market instruments that are expected to increase in share. In addition, a new subsector of the securities markets--risk-transfer markets to manage longevity, health care costs and house price risks--is likely to grow both in depth and width (including further development of longevity bonds, long-term hedges, real estate investment trusts, etc).

A completely new capital market instrument was introduced in the last decade: the so-called cat bonds (catastrophe bonds). Increases in the frequency of natural disasters occurring worldwide and subsequent large losses may produce one positive consequence: international capital markets have started to develop new instruments to cope with raising risks and capital needs. Although in certain instances they function as pure insurance instruments, these insurance-linked securities allow, on the one hand, a new dimension of portfolio diversification for investors, and on the other hand, sources of pooling capital in the incidence of prespecified catastrophes.

Cat bonds transfer a set of risk from the sponsor (usually a reinsurance company) to investors. The sponsor issues a cat bond via another entity, called a 'special purpose vehicle', which also invests the capital raised in low-risk securities (e.g. government bills or bonds). Bond-holders receive these returns in addition to a premium paid by the sponsor. If the prespecified disaster (catastrophe) does not occur in the period to the bond maturity, the principal is repaid to the investors who had already received the above-market return. If the catastrophe happens, part or all of the investors' claims are transferred to the sponsor. In the period 1997-2005, the value of cat bonds increased fourfold to about \$2 billion in 2005, and the number of new cat bond issues (8 in 2005) has risen steadily since 2004¹³. For example, in November 2006, Marsh and McLennan Securities Ltd. announced the completion of a multi-territory, multi-peril catastrophe bond transaction¹⁴ offering to the Catlin Group (a Bermuda-based insurance group), covering up to \$200 million (in addition to the traditional protection instruments the group already purchases through the reinsurance marketplace).

When overall trends in the development of the global capital market are analysed, equity derivatives certainly represent the market segment of rapidly rising importance and weight. In the language of financial professionals, the "noise" about this market segment has been considerable, although equity derivatives do not yet make up a large portion of the trade on exchanges around the world. According to the Bank for International Settlement, the gross market value of over-the-counter derivatives amounted to over \$10 trillion in June 2006.

¹³ More details available at www.mmc.com

¹⁴ Perils covered by the transaction include US hurricanes (Florida, Gulf States and East Coast), Californian earthquakes, New Madrid (US Midwest) earthquakes, UK. windstorms, European (excluding UK) windstorms, as well as Japanese typhoons and earthquakes (Source: www.today.reuters.com).

The notional amount outstanding reached the value of \$6.78 trillion in June 2006, while the gross market value of these instruments was recorded at \$671 billion, more than double the figure of 2004.¹⁵ According to some estimates¹⁶, equity derivatives will contribute between \$16.8 and \$20 billion to investment banking revenues in 2007, outpacing cash equity reserves by over threefold. Furthermore, the business is projected to expand in the next couple of years with an estimated growth of 15% annually.

There are many reasons behind such growing attractiveness of equity derivatives, mostly relying on positive corporate sector results. Thus, the thesis that the global capital market (and financial markets in general) is becoming increasingly detached from the “real economy” is questionable. Corporate actors are recording impressive cash flows, earnings are increasing and creditworthiness is strong, leading to a significant amount of mergers and acquisitions, stock buybacks and large dividends. At the same time, after a downturn in equity markets in the period 2000-2001, investors are examining how to improve equity risk management. Instead of entering immediately into large, long exposures, investors now seek more sophisticated products that allow at least partial protection. In addition, technological developments have brought forward infrastructure platforms that resulted in the birth of complex and hybrid products (or at least, created most of the conditions for these innovations).

Recently, large institutional investors--like insurers, pension funds and hedge funds--have been partially shifting asset allocation from traditional investments (beta) to alternative investments (alpha). Traditional investments, such as mutual funds, are usually targeted to deliver performance similar to a given benchmark, and they are greatly influenced by general market conditions. Institutional investors, such as pension funds, usually face legal constraints in order to deliver at least a certain level of performance. New accounting rules force them to keep a specific balance between their assets and liabilities, so they turn to preserving their capital with an absolute and positive return objective (alpha) instead of capturing the market risk premium with a relative return objective (beta).

This search for new asset classes and new investment strategies created a new generation of so-called structured products, previously related to retail markets. Structured products are synthetic investment instruments specifically created to satisfy needs that the cash financial instruments available on markets cannot satisfy. They are mostly used to reduce the risk exposure of a portfolio, or to utilize the current market trend in order to deliver absolute returns. For example, in 2006, Goldman Sachs designed a new product named a Boosted Annual Coupon Note (BANCO). Sold to multiple investors, this product is a note

¹⁵ More detailed data and a full set of historical time series are available on the BIS website under <http://www.bis.org/statistics/derstats.htm>.

¹⁶ Equity Derivatives – Special Supplement, *The Banker*, July 2006.

of which the principle is protected, but the coupon is linked to the return of EuroSTOXX 50¹⁷. The coupon is capped, and if the cap becomes effective (i.e., the limit is reached), the investor is locked into that rate for the rest of the life of the transaction.

5. Digital financial supply chain

Not many industries have benefited as much from technological developments as the financial industry, and particularly, FX and securities markets. Technology is called the “key enabler of business” in financial sectors worldwide. The world of global transactions would not have achieved today’s profile (in any aspect) without hardware and software applications, and without internet-based platforms facilitating smooth-running business on a 24 (hour) / 7 (day a week) basis. Consequently--in terms of high quality and diversified service--technology enables financial service providers to respond to increasingly sophisticated demand. At the same time, major financial market actors, with an increased emphasis on ROI, seek cost effective business solutions that also help address business needs common to both sides--the service suppliers and customers. Such common needs and challenges frequently include faster transaction processing, quick and easy access to market information, creation of value-added information for customers, more tightly integrated solutions and compliance with ever growing regulation.

Automation in financial markets is certainly not a new phenomenon. Since the days of punch cards and tape driven mainframes, the implementation of technology has benefited trade processing. The volume of data and the need for accessibility led to the use of computing power by the securities industry long ago. Over time, the systems in use for back office automation have matured into highly sophisticated mechanisms. They allow manipulation, transmittal and storage of vast amounts of trade and settlement information. Without such advances in this arena, the exponential growth in transaction volumes over the last twenty years would have been impossible.

The growth in the markets’ ability to transact such large volumes provided increased liquidity, capital generation and asset diversification. Trade failures in the settlement process have been reduced dramatically, improving the confidence of both suppliers and customers. Staff necessary to handle the increased transaction flow has increased at a marginal rate of the growth in trading volumes. With such technological advancements, the electronic transmittal of data among geographically dispersed trading partners widened opportunities to trade securities efficiently across continents. Back office trade automation in-

¹⁷ EuroSTOXX 50 is a blue-chip stock index of the Euro zone, created jointly by the Deutsche Bourse and the Dow Jones Company.

vited the notion of straight-through processing (STP), i.e., the integration of pre-trade services, trade execution and post-trade services.

Accordingly, one can conclude that technology advances in the financial industry in general should deliver improvements in four main areas: market reach (allowing easier entry and connection of customers), improved transparency (particularly in price formation), risk reduction (related to various risk types, such as operational risk, market risk, etc.) and, resulting there from, enhanced market integrity. Thus, future competition in the financial industry will not be based only on prices, but will also heavily rely on technological innovation. Such innovative solutions should feature interoperability, easy implementation, enhanced customer connectivity and level of service, swift processing, transparency, improved data management, etc. Of course, the digitalisation of the financial supply chain is not solely limited to trade execution, but expands onto pre-trade services (market analyses and research) as well as post-trade services (confirmation of trades, transmission of settlement instructions, netting of offsetting trades, etc).¹⁸

Concerning the global capital market, all traditional and new market actors have enthusiastically embarked on the technological wave. As noted, almost all stock exchanges (particularly European ones) have introduced electronic execution of trades, often from overseas. Such platforms enable customers to complete transactions in several seconds, to receive real-time data from various markets across the globe, as well as meet reporting requirements and provide a secure environment for both sides. Under these circumstances, an ideal technical vision in the securities processing space

*“...is cross-product and cross-border, with the flexibility to add product development at minimal cost and effort. ... Such vision is a real-time order-to-settlement securities processing engine which handles a wide range of instruments and currencies on a single platform”*¹⁹.

For example, NYSE Group operates two securities exchanges: the New York Stock Exchange (NYSE) and NYSE Arca. NYSE Group is the world's leading provider of securities listing, trading and market data products and services. Also a technological leader, the group has heavily invested in organizing electronic trading. NYSE Arca operates the first open, all-electronic stock exchange in the United States and holds a leading position in trading exchange-traded funds and exchange-listed securities. NYSE Arca is also an exchange for trading equity options. NYSE Arca's trading platform provides customers with fast electronic execution and open, direct and anonymous market access. Through NYSE Arca, customers can trade some 8,000 equity securities and

¹⁸ Hiller, D. “e-Volutionary e-Vision”, FX&MM, March 2007

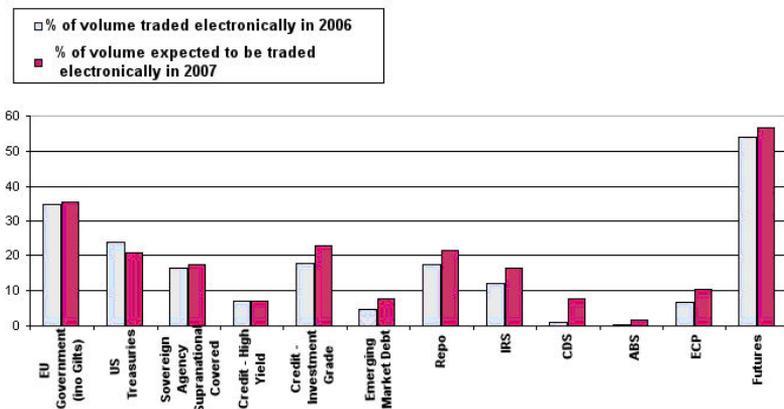
¹⁹ “Leaders in Innovation”, Special edition of Financial-i, Q4, 2006

more than 175,000 option products. On average, about 700 million shares, valued at more than \$25 billion, are traded through NYSE Arca each day²⁰.

In addition to changes of the traditional (open outcry) exchanges, some of the major actors have been “electronic” in nature since their inception. The National Association of Securities Dealers Automatic Quotation (NASDAQ) is the largest US electronic stock market. With approximately 3,200 companies, it lists more companies, and on average, trades more shares per day than any other US market. Since its foundation in 1971, NASDAQ has grown into a massive, sophisticated platform that attracts--due to its efficiency and openness--an increasing number of customers from the entire world. To illustrate, on 30 June 2006, over 690 million shares were executed through NASDAQ, equating to \$10.5 billion in volume for the single day²¹.

Concerning bond markets, one recent survey of electronic trading in the fixed-income instruments in Europe²² suggests an increasing importance of the use of various electronic platforms in improving market relations, operations efficiency and cost reduction. For example, the sell-side European firms anticipate growth in their electronic trading of 38% in 2007 (even higher than a 32% growth in 2006, compared to 2005). In 2006, more than one half of the buy-side companies traded electronically. It is also interesting to note that by 2007, it is expected that less than 1% of the buy-side companies in Europe will not trade electronically.

Picture 3. *European fixed-income instruments traded electronically (sell-side)*



Sources: SIFMA, Concise

²⁰ Details are available from www.nyse.com

²¹ Facts and figures on NASDAQ can be found at www.nasdaq.com

²² George, J. (2007): *II Annual European Fixed Income e-Trading Survey*, (Securities Industry and Financial Markets Association, SIFMA USA)

Electronic trading is not only mainstream (as it is being undertaken by firms of all sizes), but is becoming the dominant trading method for increasing numbers of firms. When looking at the product side, it is apparent that less established products, such as Interest Rate Swaps (IRS) and Credit Default Swaps (CDS), will drive the growth in electronic trading, but futures remain the leading electronically-traded products. Looking into the operational modes, the multi-dealer request for quote (RFQ) has been established as the dominant model - users can request quotes from up to 3 dealers simultaneously; then can execute a trade at the best quoted price.

Almost every other private bank in Europe and over one third of commercial banks will have electronic bond trading in 2007, but a growing use of electronic platforms is also expected among central banks, hedge and pension funds.

Picture 4. *European electronic trade in fixed-income instruments, by customer type*



Sources: SIFMA, Concise

If one analyses the motives for choosing to trade electronically, best execution and price transparency are definitely the most important, probably because pricing, is by its nature, transparent on an electronic platform. In addition, particular attention is given (from the buy side) to anonymity and highly improved security (by both sides).

* * *

As single research paper cannot aim at outlining a complete profile of such global economic phenomena as the global capital market is, there is also no place for making significant conclusions here. Nevertheless, the selected aspects

and the few examples provided may substantiate the following closing remarks. The main changes brought by financial globalisation are trends towards intensive cross border financial and payment flows, greater risk-sharing internationally through a broader array of financial instruments, an increasing share of cross-border holdings of assets and an increasing global profile of financial markets, market players and institutions. From the quantitative point of view, one can indeed conclude that the global capital market has developed a life of its own. Such a particular process operates on the level far above the global output - combined value of the world's stock markets capitalization and total debt securities is double the level of the world GDP. Nevertheless, the global capital market cannot be understood only through numbers but light has also to be shed on other parts of the system. Leading business actors have recently showed strong potential to adapt to new developments (induced by the competitors as well as by clients' needs) and even stronger interest to benefit from relatively favourable conditions in many "real economies". But, despite of tempting profit opportunities which have been created through digitalisation and liberalisation, product innovation and newly designed strategies prove that lessons from past turmoils have been learnt. An increasing attractiveness of absolute returns, contrary to previously much followed strategies to seek relative returns, in addition to pressures for an improved risk management, can be considered as pieces of evidence that links between the global capital market and the global economy are still functional. The profile of the global capital market is changing because its constitutive elements - the processes, instruments and actors - are undergoing transformation but its very nature and primary role, that of permanent financial mutation on the global scale, firmly keep the system as a whole.

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Globalna tržišta kapitala – inovirani profil

Rezime: Više od dve decenije od početka finansijske revolucije, globalizacija tokova kapitala još uvek nastavlja da privlači značajnu pažnju, kako praktičara tako i akademskih krugova. Cilj rada je da doprinese razumevanje određenih aspekta globalne scene za kapital, kao i da istakne izvesne tokove koji mogu da ilustruju njegov izmenjen profil. Postoji nekoliko osnovnih perspektiva koje opisuju globalno tržište kapitala. Kvantitativni pristup pruža senzibilniji prikaz obima, trendova, porekla i odredišta tokova kapitala, kroz procenu stepena integrisanosti globalnog tržišta kapitala. Pojava novih (vrsta) učesnika je drugi značajan aspekt procesa globalizacije, dok opisi novih proizvoda na tržištu i nastajućih segmenata daje novu perspektivu na profil globalnog tržišta kapitala. Na kraju, rad se završava sa kratkim pregledom digitalizacije finansijskih lanaca ponude.

Ključne reči: Tržišta kapitala, Inovacije, Elektronska trgovina.

JEL: F21, G15