# Comparative analysis of the stock markets of China, Russia, Brazil, South Africa and Argentina

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**ANALYSIS OF VOLATILITY OF STOCK MARKETS IN RUSSIA, SOUTH AFRICA, CHINA. BRAZIL AND ARGENTINA**


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## INTRODUCTION

Before speaking about any individual country's stock market in particular, it would be a good idea to look into the fact that Russia, Argentina, Brazil, South Africa and China forms a part of the block of economies which are considered to be emerging economies and which are projected to be the power houses of the world financial market in the coming decades. These predominantly include the BRICS (Brazil, Russia, India, China and South Africa) nations as well as emerging economies like Argentina. In this study that we are conducting, the end goal is to undertake a comparative analysis of the stock markets of Russia, China, South Africa, Argentina and Brazil.

## I. VOLATILITY OF THE CHINESE STOCK MARKET

### Stability of the stock markets and the factors contributing to stability or instability in these markets in China

China is the world's largest investor and greatest contributor to global economic growth by wide margins. The efficiency of its financial system in allocating capital to investment will be important to sustain this growth. This paper shows that China's stock market has a crucial role to play. Since the reforms of the last decade, China's stock market has become as informative about future corporate profits as in the US. Moreover, though it is a closed market, Chinese investors' price risk and other stock characteristics remarkably like investors in other large economies. They pay up for large stocks, growth stocks, and long shots and they discount for illiquidity and market risk. China's stock market no longer deserves its reputation as a casino. In addition, the trend of stock price information over the last two decades is highly correlated with that of corporate investment efficiency. China's stock market appears to be aggregating diffuse information and generating useful signals for managers. Finally, because of its low correlation with other stock markets and high average returns, China's stock market offers high alpha to diversified global investors who can access it.

The Chinese share market as an emerging and fast-growing listing venue has experienced a significant development since 2000. Prior studies on this market overwhelmingly concentrate on IPO-pricing-related and post-IPO performance-based propositions with lagging data. Adopting the updated data within the last couple of years, this paper comprehensively explores and accounts for some striking features of the Chinese stock market, and unfolds some new causes contributing to these characteristics.

Though it has become one of the largest in the world, with a market capitalization of $3.7 trillion in 2013, China's stock market is still a sideshow in a financial system dominated by a massive state-controlled banking sector. After a rocky first decade from 1990 to 2000, China's stock market earned a reputation as a casino manipulated by speculators and insiders. More recently, China's post-crisis stock market recovery has lagged those of other large economies, as its rapidly expanding shadow banking sector, issuing new high yielding but implicitly guaranteed wealth-management products to finance both market-driven and centrally planned investment, has pulled in financial capital and raised required equity returns.

1) Two new factors may lead to the extreme under-pricing in China's market, which are the unseasoned investors and their high demands of IPO shares. 2) The foreign-currency trading platform is not effective and efficient to attract the overseas investors. 3) The imbalanced industry structure of the listed firms is very significant; the Chinese share market is dominated by the manufacturing firms. 4) The Growth Enterprise Market of China is essential to address the long-standing financing difficulties for the Chinese Small and Medium-sized Enterprises, which are unqualified to raise capital from the Primary Stock Market.

There are various stock exchanges around the world, but only approximately 50 exchanges are active [1]. They are roughly classified as: well-developed markets, such as NASDQ America, New York Stock Exchange, London Stock Exchange, Singapore Stock Exchange; and developing markets, including Shanghai and Shenzhen Stock Exchanges in China, Brazil Stock Exchange, National Stock Exchange of India, Moscow Exchange in Russia (Claessens and Schmukler, 2007). Caglio et al. (2011) argue that this situation has been increasingly changing. Some developed markets are losing their leading role, but some developing markets are growing into global listing venues. The Chinese market is one of the fast-growing markets. With many years of consecutive economy growth, since 2010 China has become the second largest economy community in terms of GDP in the world (Bloomberg, 2010). Meanwhile, China's stock market has become considerably active in aspects of both issuing amount and share number since then.

The two Chinese exchanges—Shenzhen and Shanghai were globally ranked within the Top 5 exchanges. In 2010, Shenzhen Exchange was ranked No. 1 in IPO firm quantity of 321 IPO companies, which occupied around 23 percent of global firm number (321/1393=23%). Shenzhen Exchange was also ranked at Top 3 in IPO amount of US$30.2 billion raised, followed by Shanghai Exchange with US$27.9 billion. In 2011, Shenzhen Exchange was still ranked NO. 1 in IPO firm number of 243 IPO companies, which occupied around 19.8 percent of global IPO number (243/1225=19.8%). Shenzhen Exchange and Shanghai Exchange occupied Top 3 and Top 4 respectively in IPO amount. Thus, China's stock market plays an important role in global financial markets.

**Global Top 5 Exchanges in IPO Number and Amount in 2010 and 2011**

| | 2010 | 2011 |
|---|---|---|
| Global NO. of IPO Firms | 1393 | 1225 |
| Capital Raised (US$)Globally | $284.6billion | $169.9billion |
| Number of IPO Firms | Shenzhen (321)<br>Australian (92)<br>Hong Kong (87)<br>New York (82)<br>NASDAQ (76) | Shenzhen (243)<br>Warsaw (123)<br>Australian (101)<br>Hong Kong (68)<br>New York (67) |
| Amount (US$billion) | Hong Kong ($57.4)<br>New York ($34.7)<br>Shenzhen ($30.2)<br>Shanghai ($27.9)<br>Tokyo ($14.3) | New York ($30.5)<br>Hong Kong ($25.3)<br>Shenzhen($15.7)<br>Shanghai ($15.1)<br>London ($13.9) |

**Chinese Primary Stock Market**

*Institutional Context*

The most prominent context is that this market is a product of the Chinese economic reform converting the government-planned economy to the market-oriented economy. It provides the Chinese State-Owned Enterprises (SOEs) with a platform to achieve the privatization of state assets. Megginson and Netter (2001) suggest that the privatization of state assets is widely viewed as one measure for improving and achieving a long-run economic growth. According to Chen et al. (2000), the first privatization in China emerged in 1984, but the privatization process has proceeded very slowly. The Chinese government established Shanghai Stock Exchange (SHSE) in 1990 and Shenzhen Stock Exchange (SZSE) one year later to accelerate the process. Under this context, the Primary Stock Market is dominated by the Chinese SOEs. As the tables exhibit, the Top 10 A-shares in both issuing volume and market capitalization were overwhelmingly dominated by the SOEs in 2011.

**Top 10 A-Share by Issuing Volume in SHSE (2011)**

| Code | Issuers | Issued Vol. (Million) | % |
|---|---|---|---|
| 601288 | Agricultural Bank of China | 294,055.29 | 12.6 |
| 601398 | Industrial & Commercial Bank of China | 262,225.50 | 11.24 |
| 601988 | Bank of China | 195,525.05 | 8.38 |
| 601857 | China National Petroleum Corporation | 161,922.08 | 6.94 |
| 600028 | China Petroleum & Chemical Corporation | 69,922.06 | 3.00 |
| 601818 | China Everbright Bank | 40,434.79 | 1.73 |
| 601328 | Bank of Communications | 32,709.16 | 1.4 |
| 601998 | China Citic Bank | 31,905.16 | 1.37 |
| 601668 | China State Construction | 30,000.00 | 1.29 |
| 600018 | Shanghai International Port | 22,755.18 | 0.98 |
| Sum | | 1,14,154.17 | 48.92 |
| Total on the SHSE | | 2,333,237.21 | 100 |

As the table shows, the most significant feature is that this group of issuers including six national banks and two national energy companies are owned by the government, apart from the last two ones. In addition, the 10 issuers' shares accounted for 48.92 percent of the total share volume issued in the SHSE with around 1,000 listed companies. By contrast, the top 10 issuers in US stock markets, even assuming all are national firms, retained around 5.08 percent of the total share volume by 4th January 2013 . This reflects that China's Primary Stock Market is a SOEs-dominated listing platform that is designed for the SOEs.

**Top 10 A-Share by Market Capitalization in SHSE (2011)**

| Code | Issuers | Market Cap. (¥ M) | % |
|---|---|---|---|
| 601857 | China National Petroleum Corporation | 1,577,121.04 | 10.68 |
| 601398 | Industrial & Commercial Bank of China | 1,111,836.11 | 7.53 |
| 601288 | Agricultural Bank of China | 770,424.87 | 5.22 |
| 601988 | Bank of China | 570,933.14 | 3.87 |
| 600028 | China Petroleum & Chemical Corporation | 502,040.43 | 3.40 |
| 601088 | China Shenhua Energy Company Limited | 417,717.99 | 2.83 |
| 601628 | China Life Insurance Group | 367,327.07 | 2.49 |
| 600036 | China Merchants Bank | 209,696.97 | 1.42 |
| 600519 | Guizhou Maotai Group | 200,680.19 | 1.36 |
| 601318 | China Pingan Insurance Group | 164,843.95 | 1.12 |
| Sum | | 5,892,621.76 | 39.9 |
| Total on the SHSE | | 14,769,275.78 | 100 |

On the market capitalization of the 10 issuers, it accounted for 39.9 percent of the total capitalization in the same market. Similarly, all these issuers are completely national enterprises. Although an increasing number of non-SOEs have been listed on the stock market, and diversified ownership structure of listings, the SOE firms have more privileges from the government than other non-SOE companies. For instance, the SOEs have favourable access to bank loans, lower costs of capital, and advantages in monopoly. Consequently, the SOEs have advantages in policy supports and financial subsidies, which are able to promote their IPO performance.

*Unique Characteristics*

The special institutional context of China's stock market may lead to its unique characteristics including extreme under-pricing performances in the short run, a dual-currency trading mechanism, unbalanced industry structures.

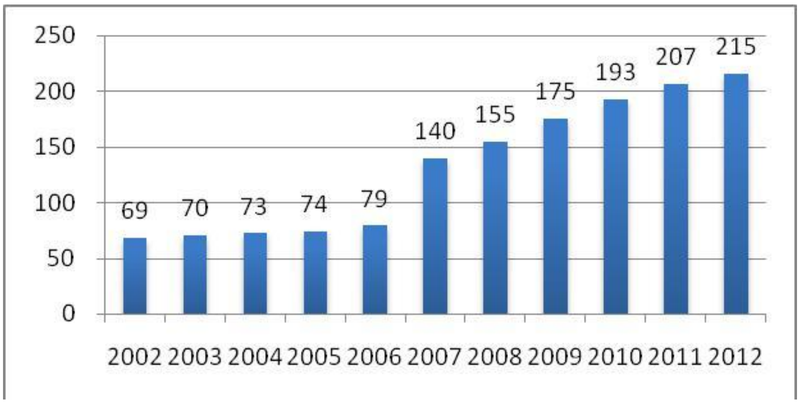
(1) The most significant feature is remarkable under-pricing performances in the short run. Although there are many determinants influencing IPO under-pricing, the strict government regulation is a very vital factor in China. Unlike the pricing strategies in the US market, where the issuers with assistance of investment banks determine their issuing prices in a book-building method In China, the IPO pricing is determined by the CSRC. The CSRC employs a price earning rate (PE) as a benchmark to determine the pricing range of an IPO. Based on the listed IPO firms during 1993 to 1998, their IPO prices were instructed around 13-15 times of PE. Currently, this benchmark for the majority of IPO firms maintains around 30 times. Once the CSRC confirms the pricing of an IPO, the share allocations are conducted by a lottery mechanism, and then the winners are allowed to purchase an amount of shares at the fixed IPO price. This administrative pricing approach gets the share prices deviating from the great demands of the public investors.

The second one is political incentives. The relevant politicians are likely to encourage this sort of underpricing IPOs, because of the strong government-oriented context in China. These politicians intend to through the high returns attract more prospective new issuers and political media coverages. Receiving a wide coverage in the top political media outlets is vital for these politicians because such visibilities may contribute to their political position in the Communist Part of China. As Banyan (2009) suggested, influential political media in China is more likely to draw attention from the national leaders, which is able to advance these politicians' career.

The last one is high demands to IPO shares. This high demands attribute to a large number of domestic investors in China. As the figure shows, there was an increasing number of individual investors engaged in A-share trading in the last 10 years. There have been over 200 million individual investors in the Chinese Mainland by the end of 2012.

The high demands to IPO shares are also due to lacking alternative investment choice in China, so the National Bureau of Statistics of China, the per capita income of the Chinese residents increased 14.75% per year on average during 2002 to 2012.

Meanwhile, the bank interest rate of one-year term deposit remained around 2.60% within the 10 years, but the Consumer Price Index (CPI) rate remained around 2.63% on average per year. Consequently, the Chinese residents were willing to invest in shares for more returns rather than bank deposits.




**Number of Individual Investors in Mainboard 2002-2012**

Additionally, this type of issuing mechanism lacks market-orientated factors, because the annual IPO quota is determined by the central government. As a result, the gap between the high IPO demands and unreasonable allocations result in the extreme under-pricing too.

(2) The second feature is the dual-currency trading platforms. There are two types of shares or trading systems: A-share and B-share. The A-share is restricted to be traded by the domestic investors in the Chinese currency only. Since 2003 some qualified foreign institutional investors (QFIIs) have been allowed to trade A-shares in the same currency. The B-share was in early 1990s created specially for the overseas investors trading it in US or Hong Kong dollar, in order to attract foreign funds to the Chinese securities markets. Since February 2001, it has been available for the domestic individual investors to trade B-shares in a foreign currency. Apart from attracting more foreign investors, the Chinese government separated the share types to protect its financial market and economy from external impacts, as the emerging securities market and growing economy were still vulnerable. This unique dual-currency trade system is exclusive to China's stock market.

Next, is the imbalanced industry structure. The Chinese securities markets lean heavily towards manufacturing firms, due to China's economy structure. As the table indicates, in China, the manufacturing sector in 2011 was predominant with 84 IPO firms, which accounted for approximately 32.31 percent of total IPO firms in the Chinese listing markets. This sector was the second largest sector with US$11.7 billion capital raised, which accounted for around 27.08 percent of total capital. While the manufacturing sector was excluded from the top 5 groups in the US, and the dominant sectors are all service business-based industries. As a consequence, it is not surprising that China is well known as the World's Factory or the Global Manufacturer.

**Top 5 IPOs Distribution by Industry Sectors in the Year of 2011**

| | China | US |
|---|---|---|
| Number of IPO Firms | Manufacture (84) | High Technologh (23) |
| | Materials (72) | Energy (25) |
| | High Technology (40) | Health Care (16) |
| | Consumer Staples (36) | Consumer Products (9) |
| | Comsumer Products (28) | Real Estate (9) |
| Capital Raised | Materials (US$11.9b) | Energy (US$9.3b) |
| | Manufacture (US$11.7b) | High technology (US$8.1b) |
| | Energy (US$6.8) | Health Care (US$5.9) |
| | Retail (US$6.6) | Consumer Products (US$3.9) |
| | Financials (US$6.2) | Retail (US$3.8) |

Although there is no a common view on what an ideal proportion of sector allocation should be in a stock market, a diversified market with a balanced industry allocation may be more attractive to investment portfolios, and consequently is conducive to a sustainable development of economy. As the table demonstrates, industry sectors in global exchanges evenly distribute in general. However, the Chinese stock exchange presents a different distribution pattern. The manufacturing-related sectors in China account for 58.3 percent of total listings, which is extremely higher than the global average level 35.47%. By contrast, other sectors have a low proportion. In addition, service-related sectors dominating global exchanges, such as the financials at 9.07%, social services at 11.18%, the sector have very low ration (0.70 and 3.6% respectively) in the Chinese Market.

**Distribution by Industry Sectors on Chinese Exchange & Global Exchange**

| Industry Sectors | China Stock Exchange* | | | Global Exchanges on Average** | |
|---|---|---|---|---|---|
| | Capitalization(¥ Billion) | N. of Listings | % listings | N. of listings | % IPOs |
| Total | 6,115.2 | 1582 | 100 | 16492 | 100 |
| Agriculture | 92.6 | 29 | 1.83 | 9 | 0.05 |
| Metals &Mining | 734.5 | 151 | 9.54 | 1309 | 7.93 |
| Manufacturing | 3,257.2 | 923 | 58.3 | 5849 | 35.47 |
| *Food & Beverage* | *551.9* | *60* | *3.79* | *571* | *3.46* |
| *Household Goods* | *124.2* | *60* | *3.79* | *899* | *5.45* |
| *Paper & Printing* | *70.5* | *32* | *2.02* | *88* | *0.53* |
| *Petrochemicals* | *480.6* | *184* | *11.63* | *670* | *4.06* |
| *Electronics* | *445.3* | *125* | *7.90* | *955* | *5.79* |
| *Machinery* | *1,055.3* | *350* | *22.12* | *1379* | *8.36* |
| *Pharmaceuticals* | *468* | *91* | *5.75* | *738* | *4.47* |
| *Others* | *60.4* | *21* | *1.33* | *549* | *3.32* |
| Public Utilities | 126.4 | 29 | 1.83 | 227 | 1.38 |
| Construction | 143.7 | 26 | 1.64 | 605 | 3.67 |
| Transportation | 68.5 | 28 | 1.77 | 344 | 2.09 |
| IT | 377 | 162 | 10.24 | 2061 | 12.50 |
| Wholesale & Retail | 255.9 | 64 | 4.05 | 836 | 5.07 |
| Financials | 278.7 | 11 | 0.70 | 1496 | 9.07 |
| Real Estate | 401 | 64 | 4.05 | 575 | 3.49 |
| Social Services | 232.7 | 57 | 3.60 | 1844 | 11.18 |
| Media | 81.8 | 19 | 1.20 | 758 | 4.60 |
| Others | 65.1 | 19 | 1.20 | 579 | 3.51 |

**The Growth Enterprise Market of China**

As studies suggested, a vibrant stock market may contribute to Gross Domestic Product (GDP) and employment growth. Meanwhile, some stock exchanges view the listings as considerable source of revenue, so they lower their entry thresholds or set up new listing platforms for the small and fast growing firms, in an effort to attract more firms to go public there. This strategy may help these exchanges obtain more incomes. So far, the majority of developed equity markets have established their Growth Enterprise Market (or called Secondary Board; Alternative Market) to diversify their trading platforms to cater for different investors, such as the NASDAQ in New York, the AIM in London, the SESDAQ in Singapore, the HKGEM in Hong Kong.

The purpose of establishing the GEMC is not only diversifying the Chinese capital market, but also addressing the long-standing financing difficulties for the Chinese SMEs. The SMEs act as a pivotal role in terms of boosting economy, creating employment opportunities, advancing innovation in China. By the end of 2011, the Chinese SMEs have contributed to approximately 50 percent of national tax revenue, 60% GDP, 80% job opportunities, 65% patents and intellectual properties (according to the database from the Ministry of Industry and Information Technology of China).

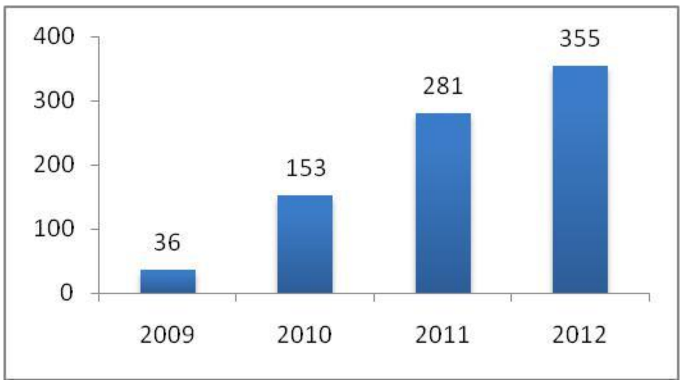
The Chinese SMEs have been confronting financing difficulties for years (Chen and Wang, 2009).

According a survey (conducted by the National Development Centre of Peking University) in 2011, 78 percent of SMEs have experienced or were experiencing financial shortage in Zhejiang –a SMEs dominated state. Additionally, 50 percent of owners of the SMEs raised fund through loaning from their relatives and friends, and other informal channels. They have no access to bank loans because of their high rate of loan default and low credit rate (Chen et al. 2010). Because of the SMEs' contribution to the Chinese economy, the central government is keen to broaden the financing channels for the SME sand to bridge the financing gap. Under this circumstance, the GEMC was established, Cui et al. (2010) suggest that IPO markets are able to provide SMEs with efficient financing platforms, and reduce their financing cost greater than other channels.

The GEMC was inaugurated in Shenzhen Stock Market on 30th October 2009 with 28 initial IPO companies. This market not only facilitates capital-raising for those growing SMEs that possess high profitability, technology innovation and advanced business models, it also facilitates venture capitalists exiting from their investee companies. According to the latest record of the GEMC official website, by 10 September 2012 there have been 355 listed companies with total market capitalization at RMB ¥924,877,099,614 and the total amount of issued shares 58,572,665,181.

*Significances of Establishing the GEMC*

The significances of the GEMC are fourfold. First of all, the GEMC provides those thriving entrepreneurial companies with direct fundraising opportunities. As the figure shows, 355 firms have raised capital through IPOs in the listing market by 2012. The total amount of RMB ¥ 184.1 billion has been raised by August 2011. According the record from the CSRC website, there has been 262 IPO applicants on the IPO shortlist by 11th July 2013. It is expected that the number of listed firms on the GEMC will be over 500 very soon. Therefore, the GEMC facilitates small firms to raise fund for their future growth.




**Number of Listed Firms on GEMC (2009-2012)**

Secondly, this market provides the venture capital investors, who invest in those entrepreneurial companies, with an optimum exit channel, which motivates the Chinese venture capital industry. As the table outlines, the GEMC has become the preferred IPO market for venture capital investors to exist Since its inception in 2009, and over 40 percent (125 / 310 = 40.3%) and 52 percent of(50 / 95 = 52.6%) venture-capital-supported firms achieved their IPOs on the GEMC in 2011 and 2012 respectively.

In terms of investment return rate for venture capitals, the GEMC had the best performance among the major IPO markets in the last three years. Over 12 times of return rates in the GEMC in 2010 and 2011 are overwhelmingly greater than the counterparts in any other markets. Therefore, the GEMC facilitates venture capital investors to exit with higher return rates.

**Distribution of IPO Firms Supported by Venture Capital 2009-2012**

| | 2009 | | 2010 | | 2011 | | 2012 | |
|---|---|---|---|---|---|---|---|---|
| | Firms | Return Rate | Firms | Return Rate | Firms | Return Rate | Firms | Return Rate |
| GEMC | 32 | 8.39 | 63 | 12.13 | 125 | 12.9 | 50 | 5.03 |
| SZSE | 33 | / | 80 | 9.38 | 93 | 5.22 | 23 | 4.84 |
| SHSE | 0 | / | 9 | 7.03 | 25 | 5.71 | 13 | 2.20 |
| HK | 12 | / | 31 | 1.64 | 6 | 2.11 | 5 | -.0.1 |
| NASDAQ | 4 | / | 14 | 2.81 | 34 | 3.86 | 4 | 7.73 |
| NYSE | 1 | / | 14 | 5.71 | 27 | 4.52 | 0 | 0 |
| Total | 82 | | 211 | | 310 | | 95 | |

*IPO Return Rate on average = (Pre-IPO share amount * IPO Price – Investment Amount) / Investment Amount.*

Thirdly, the GEMC helps the IPO firms standardize their corporate governance. Vast majority of entrepreneurial companies in China are run in a nonstandard way at their early stage, but they need gradually set up a modern corporate governance system catering for the IPO requirements. One of the traditional functions of stock exchanges is to develop corporate governance codes and recommendations for IPO firms. According to Provision 19 in the Provisional Administrative Regulations of Initial Public Offerings (PARIPO) in the GEMC, it requires that the issuers must set up a perfect governance structure of corporate, including shareholder meeting, board of directors, and board of supervisors, independent director, board secretary, and audit committee systems. These appropriate regulations and behaviour standards to these directors, supervisors and other executive managers enforce they fulfil their duties according to the laws. In addition, the GEMC requires, prior to submitting the IPO documents, the sponsors must conduct due diligence and assessment on the issuers. According to Provision 54 in the PARIPO, the sponsors who provide the CSRC with any fake information or document will be punished. They are also obliged to supervise and guide the issuers to operate regularly and lawfully on an ongoing basis.

**Conclusion**

Based on the latest data, it reveals some new findings that are rarely discussed to account for the characteristics. This paper suggests three main factors: unseasoned investors, unreasonable investor's demands to IPO shares, an imbalanced industrial structure of the listed firms, which may all contribute to these features. It also finds that the foreign-currency trading platform has no significant contribution to boost the Chinese financial market. On the contrary, the alternative share market-GEMC facilitates those small companies to raise capital and diversifies the Chinese equity market.

In this section we shall be focussing on the Russian stock market beginning with a general overview which will flow into factors which cause volatility in the Russian stock market and finally ending with a comparative analysis with certain other stock markets.

## II. The Volatility of the Russian Stock Market

### General Overview and the Historical Development of the Russian Stock Market

The case of Russia is particularly interesting, as the country being once the leader of the Soviet block had to create the stock market in the midst of its transition from the planned system to the market economy, during the times of severe economic crisis. Starting from the scratch in late 1994, the Russian stock market has by now become one of the largest emerging markets in the world, with the total market capitalization over $600 billion or 80% of GDP at the end of 2005.[1] Currently, more than 250 Russian stocks are listed locally or abroad, the monthly trading volume is over $14 billion, and IPOs are booming. However, the market still suffers from many structural deficiencies, such as high concentration and low potential of diversification using local instruments.[2]

[1] Alexei Goriaev and Alexei Zabotkin, *Risks of investing in the Russian stock market: Lessons of the first decade,* Emerging Mrkets Review, 2006.

[2] Goriaev, A., 2004, *Risk factors in the Russian stock market*, Working Paper, New Economic School.

It has been observed by scholars that when it comes to judging the volatility of the Russian stock market we need to look at two time periods. In the earlier years it was believed that the volatile nature of the Russian stock market was largely down to highly unstable macroeconomic variables in 1995-2004; however, upon maturing it became more sensitive to global factors, such as U.S. stock market performance and interest rates post 2005.[3] Others state that the earlier phase of instability was created by issues related to corporate governance, scandals and political risk while there was a middle stage (mid 2000s) where the macroeconomic variables like oil prices, exchange rates and performance of other emerging economies caused volatility.[4]
Another way to analyze the volatility of the Russian stock market is to use the 1998 financial crisis of Russia as a landmark event and see how factors affecting stability of the market have changed or evolved since then.

## FACTORS AFFECTING VOLATILITY IN THE RUSSIAN STOCK MARKET

### 1. The Political and Governance Risk Factors

Since the launch of the RTSI in September 1995 to the resignation of President Yeltsin on 31 December 1999, the market was moved by a perception that Russia was headed either for a relapse into Soviet-style politics and economics, or else would break out into a functioning law-based market system.
The markets came back to life, when the RTS index tripled as the prospects of Yeltsin's re-election firmed (by keeping out the communists). That outcome was the key to a widespread assumption among international investors that the country's transition would now be plain sailing.
That illusion and its destruction in the crisis that culminated in August 1998 with the ruble devaluation and government debt default produced one of the most remarkable boom-bust cycles in the history of financial markets. The RTSI plummeted 93% from its pre-crisis peak of 572 on 6 October 1997 to a low of 39 exactly a year later on 5 October 1998.

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[3] Anatolyev, S., 2005, *A ten-year retrospection of the behavior of Russian stock returns,* Working Paper, New Economic School.

[4] Lucey, B.M., Voronkova, S., 2005, *Russian equity market linkages before and after the 1998 crisis: Evidence from time-varying and stochastic cointegration tests*, BOFIT working paper.

Against the background of the deep recession and widespread hardship in the first years after the collapse of the Soviet system, the re-elected Yeltsin administration lacked the political capital to implement tough reforms – above all a fiscal adjustment, the lack of which was the root cause of the 1998 financial crisis and lot of volatility in the stock market.

Meanwhile, the administration's weakness was compounded by the power of the business leaders, so-called 'oligarchs', who had acquired control of prize natural resource assets in the privatization auctions in late 1995. There was rampant abuse of corporate governance norms as well as complete oppression of minority shareholders.

The financing of Yeltsin's re-election campaign was only the first step in a 'privatization of the state', with many senior officials and legislators effectively on the payroll of one or another of the leading business groups.[5]This created a vicious circle. Beholden to big business interests, the already weak administration became even less capable of carrying out reforms – including the enforcement of better corporate governance standards.[6]

However things improved when Vladimir Putin came to power and held frank discussions with the business leaders and enacted the much needed reforms. This made the stock market stable. Reforms included the improved security of title to their assets gave the controlling owners of Russia's major companies an interest in both maximizing and protecting their wealth (including the benefits of improved reputation) by increasing their companies' market valuation. Additional support came from a thorough overhaul of basic company law, which entered into force in January, 2002. The comprehensive amendments were designed to close out the loopholes which had been exploited by owners and managers in the late 1990s to disenfranchise minorities, especially by means of abusive share dilutions.

But the market received a jolt in 2003 once more. This happened when a major listed company in Russia, Yukos, was found guilty of tax evasion and corporate fraud. Investors interpreted Yukos events as a signal about the toughening of the government policy towards the business community. The political risk appeared especially high for non-transparent private companies, oil companies, firms privatized via the ill-famous loans-for-shares auctions, and, surprisingly,

[5] Supra. Note 1.

[6] Ibid.

transparent state-owned companies, judging by sensitivity of their stock prices to Yukos events. The stock markets crashed once more and hit an all time low.[7]

However, there were no terminal effects of the Yukos affair and quite soon the stock markets rebounded and there was a huge positive surge by 2005.

However there were secondary factors which were causing market volatility between 2003-2008 .

**2. Macroeconomic Variables:**

The post liberalized Russian economy depended heavily on the energy sector for its growth and the oil fields and the oil prices across the world was a key factor in determining volatility of the stock market. The influence of oil and gas prices in the stock market is expressed via gradual reassessment of expectations about the long-term oil price level, whereas interim oil price volatility is only of secondary importance relative to emerging markets' fluctuations.[8] The fall in oil prices in 2008 had a huge role to play in creating an unstable stock market in Russia.

In recent years however oil prices are not the only macroeconomic variable which has affected the stability of the Russian stock market. The Russian stock market also has become susceptible to the performances of the other emerging markets.

Empirical studies have shown that as Russian companies became globalized entities in the late 2000s, the Russian stock market was increasingly affected by global events. Between 1999—2005 the global factors or performance of other stock exchanges did not really cause any volatility in the Russian stock market. However there was definitely an effect post 2005. Here, the time domain is not the only important aspect, but what is interesting to note is how the indices of different sectors have become more prone to being affected by global factors.[9]

The utilities and telecom (wireline and wireless) sectors have the highest interrelation with the global markets followed by the metals and oil industries. The consumer goods sector driven by rapidly growing consumer demand in Russia in recent years appears to be the least sensitive to the global trends. Most industries (especially Gazprom, wireless, and Sberbank) became more closely related to the emerging markets.

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[7] Goldman, M., 2003, *The Piratization of Russia: Russian Reform Goes Awry*, Rutledge.

[8] Kuznetsov and P. Kuznetsova, *The Russian Capital Market: The First 20 Years,* University of Central Lancashire Lancashire Business School Working Paper Volume 2, Number 3 March 2011

[9] Supra, note 1.

Another global macroeconomic factor which is global interest rates makes a very small dent in creating instability in the Russian market.[10] Also, in the late 2000s the appreciation of the Ruble with respect to the dollar led to an upswing in the Russian stock market.[11]

The influence of the banking system's excess cash reserves on the stock market has been historically limited and became evident only in 2005. Apparently, the abnormally high liquidity in the Russian money market was one of the primary drivers of the latest stock market rally in the second half of 2005.

**Comparison with South Africa, China and Brazil**

- It has been analyzed that Russia's stock market is more volatile due to political risks and governance factors as opposed to Brazil and South Africa where financial factors are the reason for unstable markets. The country with the highest historical financial risk is Brazil which implies that international investors, banks, ratings agencies, etc should be concerned with this country's finances.[12]
- The Indian and Brazilian stock market is more prone to be volatile as a result of change in oil prices. These two countries show more volatility as opposed to Russia.
- The concept of economic risk is theoretically different from financial risk. In Russia both economic and financial factors cause volatility but in India and South Africa, the economic factors are more prevalent as opposed to financial factors.

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## II. THE VOLATILITY OF STOCK MARKETS IN ARGENTINA -

[10] A. A. Peresetsky, *What determines the behavior of the Russian stock market,* MPRA Paper No. 41508, posted 24. September 2012 available at http://mpra.ub.uni-muenchen.de/41508/1/MPRA_paper_41508.pdf

[11] Ibid.

[12] Shawkat Hammoudeh, Ramazan Sari, et al, *The Dynamics of BRICS's Country Risk Ratings and Stock Markets, U.S. Stock Market and Oil Price*, Journal of Mathematics and Computers Volume 94, August, 2013

The Buenos Aires Stock Exchange is the organization responsible for the operation of Argentina's primary stock exchange located at Buenos Aires CBD. Founded in 1854, is the successor of the Banco Mercantil, created in 1822 by Bernardino Rivadavia. The Stock Exchange's current, Leandro Alem Avenue headquarters was designed by Norwegian-Argentine architect Alejandro Christophersen in 1913, and completed in 1916. A modernist annex was designed by local architect Mario Roberto Álvarez in 1972, and inaugurated in 1977.

Citing BCBA's self-definition, "it is a self-regulated non-profit civil association. At its Council sit representatives of all different sectors of Argentina's economy." Important indicators and reports for following the health of Argentina's economy include the gross domestic product (GDP), the unemployment rate, the balance of trade, and industrial production and capacity utilization reports.

The unemployment rate, reported monthly, is also an important factor to watch, as there is usually strong correlation between the employment situation and the GDP. Analysts would expect any substantial positive or negative changes in the unemployment rate to be reflected in GDP. The monthly balance of trade reports are also very closely followed, as Argentina's economy depends heavily on agricultural exports and on maintaining a positive trade balance. Also of importance are the primary manufacturing and production indicators, the monthly Industrial production and capacity utilization reports. Capacity utilization is the percentage of Argentina's total manufacturing capability that is actually being used. Industrial production and capacity utilization figures usually provide solid reflections of the overall economy and ultimately impact the GDP.13

The most important index of the Stock market is the MERVAL (from MERcado de VALores, "stock market"), which includes the most important papers. Other indicators are Burcap, Bolsa General and MAR, and currency indicators Indol and Wholesale Indol.

The MERVAL is a major stock market index which tracks the performance of large companies based in Argentina. It is a basket weighted index. It follows the price changes of stocks of the largest publicly traded companies based in Argentina. The MERVAL is the primary stock market index for Argentina and stocks traded on the Buenos Aires Stock Exchange, roughly

[13] http://www.investopedia.com/ask/answers/032315/what-are-most-common-market-indicators-follow-argentinian-stock-market-and-economy.asp

corresponding to the S&P 500 Index in the United States.14 The market value of a stock portfolio is selected according to the market share in the Buenos Aires Stock Exchange, number of transactions and quotation price. The index has a base value of $0.01 as of June 30, 1986.15

The BURCAP index uses stocks that are also included in the MERVAL index as its components, weighting each stock according to market capitalization.16 Argentina is the country with the level of volatility is the highest in the region of Latin America.17 However, after financial liberalization, volatility has significantly decreased to 0.029. With the implementation of the process of financial liberalization, the market cycle of Argentina became more pronounced in the short term, but stabilized in the long term.18

Forecasts for 2015 –

Argentina's economy is expected to have recorded its second consecutive contraction in the final quarter of 2014. Although recent data point to a slight improvement in consumer sentiment and industrial production, prospects for this year remain lackluster. The country is expected to have recorded its highest fiscal deficit since the 2001 crisis last year. The government is continuing to rely on the Central Bank's issuance of local currency to cover its spending and it is likely to maintain this fiscal expansionary strategy ahead of the October presidential elections. Political turmoil and uncertainty related to the yet unresolved holdouts saga will exert pressure on international reserves this year, although the Bank is expected to continue intervening in the foreign exchange market to maintain a moderate and gradual depreciation of the peso. Inflationary pressures derived from high issuance of local currency combined with a relatively slower depreciation of the peso will continue to weigh on the country's competitiveness and lead to a further deterioration in Argentina's external accounts.

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[14] See, http://www.investopedia.com/ask/answers/032315/what-are-most-common-market-indicators-follow-argentinian-stock-market-and-economy.asp

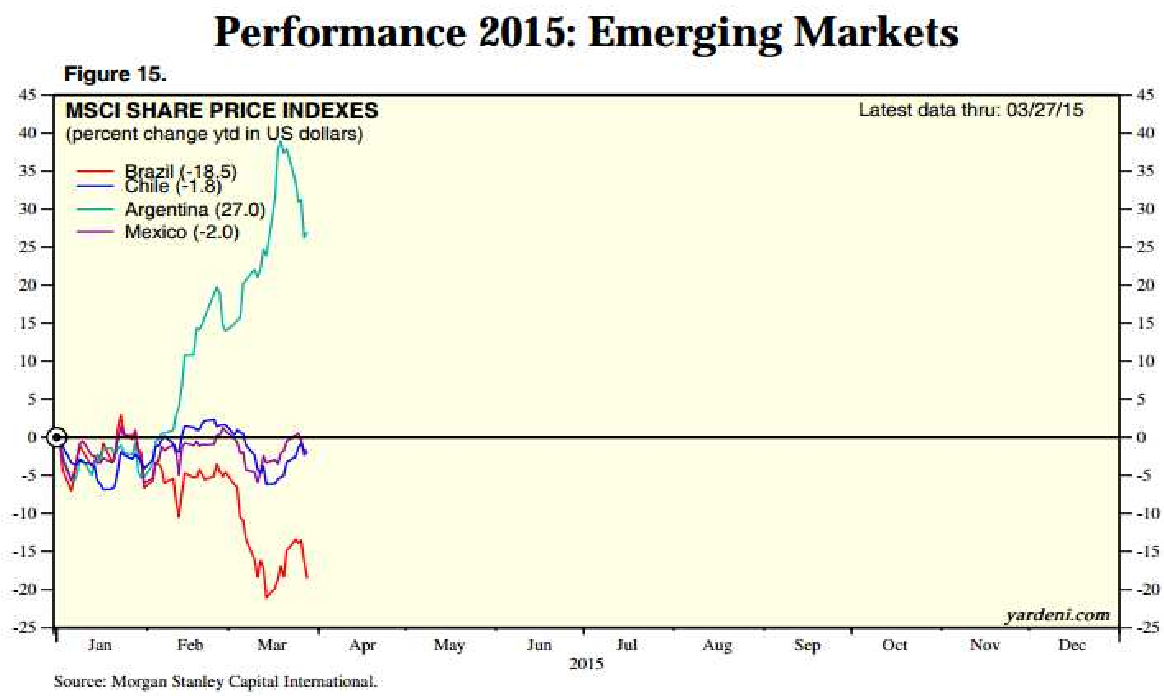
[15] See, http://www.tradingeconomics.com/argentina/stock-market

[16] *Infra* Note 6.

[17] *Ibid.*

[18] Mnif Trabelsi Afef, Financial Liberalization and Stock Market Behaviour in Emerging Countries, Journal of Behavioural Economics, Finance, Entrepreneurship, Accounting and Transport, 2014 2 (1), pp 8-17, availabale at: http://pubs.sciepub.com/jbe/2/1/2/

Macroeconomic imbalances, unfavorable external conditions and the unresolved holdouts issue suggest that the recession is likely to continue this year. LatinFocus Consensus Forecast panelists expect the economy to contract 0.3% this year, which is down 0.1 percentage points from last month's projection. The economy has been foreseen to be recovering in 2016 and posting a 2.3% expansion.




Argentina's contentious debt default and a worsening recession haven't stopped investors with a high tolerance for risk from pouring into its stock market. Big investments by George Soros's family office and hedge-fund manager Daniel Loeb helped drive the Merval's gains. Taking into account the peso's sharp depreciation this year, Argentine shares are up 68% in dollar terms. Investors see a potential turning point in presidential elections scheduled for October 2015, from which Mrs. Kirchner is constitutionally barred. Contenders for her post have vowed to work toward exiting default and to adopt policies aimed at righting the economy. Money managers hope to get in front of a stampede into Argentina should a new government succeed in restoring the country's credibility in global financial markets. The government devalued the peso by 20% in January, while the currency has periodically hit record lows in the black market this year. Pressure is building for another devaluation in the official rate, which would further erode any profits from rising share prices.[19] Any gains could quickly vanish, investors and analysts say. The country's stock market is smaller than others in the region, so shares could tumble if even a small amount of money leaves the market.[20]

Indeed, analysts warn that not all of the Merval's gains this year reflect optimism about Argentina's future. Many local companies and wealthy Argentines are buying stocks and selling equivalent depositary receipts to obtain dollars as a way to get around the government's currency controls. They could pull out if the economy improves.

Still, the popularity of Argentine stocks shows how much risk some investors are willing to take for a chance at hefty returns. Argentina is in a group of small, developing economies—often called frontier markets—that have become popular with investors in the past year because they weren't as heavily affected by the effects of the Federal Reserve's easy-money policies. While they carry extra danger—ranging from volatile currencies to political upheavals—many investors see them holding up better than larger emerging markets as rising rates draw money back to the U.S.

Argentina's performance is an outlier even among frontier markets. MSCI Inc.'s index of frontier stock markets is up 18% this year. By comparison, MSCI's emerging-market index has risen 0.3% and the S&P 500 is up 6.7%.[21][22]

Because Argentine stocks aren't widely held by U.S. mutual funds, many investors typically gain exposure to them via American depositary receipts, which are issued by non-U.S. companies but trade on U.S. exchanges. Argentine ADRs protect buyers from the falling peso, but their prices

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[19] Argentine stock surge not all it seems, available at: http://www.ft.com/intl/cms/s/0/f613dd06-3434-11e4-8832-00144feabdc0.html#axzz3VlyR88gM

[20] The ridiculously troubled country with the world's best-performing stock market, available at: http://qz.com/256239/the-ridiculously-troubled-country-with-the-worlds-highest-flying-stock-market/

[21] Argentine Stocks Get Boost From Investors With Taste for Risk, available at: http://www.wsj.com/articles/argentine-stocks-charge-higher-despite-turmoil-1412184191

[22] Argentina's Market Rises As Investors Eye Election, http://news.investors.com/investing-international-leaders/020915-738543-argentina-stocks-rebounding.htm

are linked to those of local shares. Purchases of ADRs, which are up 19% so far this year, boost share prices in Argentina.

The market capitalization of the Buenos Aires Stock Exchange is only $64.6 billion, about the same as online-commerce company eBay Inc.
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Because Argentine stocks aren't widely held by U.S. mutual funds, many investors typically gain exposure to them via American depositary receipts, which are issued by non-U.S. companies but trade on U.S. exchanges. Argentine ADRs protect buyers from the falling peso, but their prices are linked to those of local shares. Purchases of ADRs, which are up 19% so far this year, boost share prices in Argentina.

The market capitalization of the Buenos Aires Stock Exchange is only $64.6 billion, about the same as online-commerce company eBay Inc. Additionally, analysts say local investors could pull out of the market if restrictions on buying dollars are loosened and they no longer need to rely on the stock market to shift money into greenbacks. Still, many investors say they are

[23] Argentina Stock Market Surges To 1st In The World Despite Risk Of Default, available at: http://seekingalpha.com/article/2357385-argentina-stock-market-surges-to-1st-in-the-world-despite-risk-of-default

willing to take a chance on Argentine stocks because they appear cheap. Argentina's stock-market capitalization as a percentage of overall economic activity is only 6%, compared with 44% in Mexico and 68% in India, according to the latest World Bank data. That means they have plenty of room to rise. [24]

## III. The Volatility of the Stock Market in Brazil

**Introduction**

As the world went through the 2008 financial crisis, Brazil had it more smooth-sailing attracting the attention of investors around the world. This has been attributed to the authorities' specific know-how to manage internal economic crisis which have historically plagued the country.

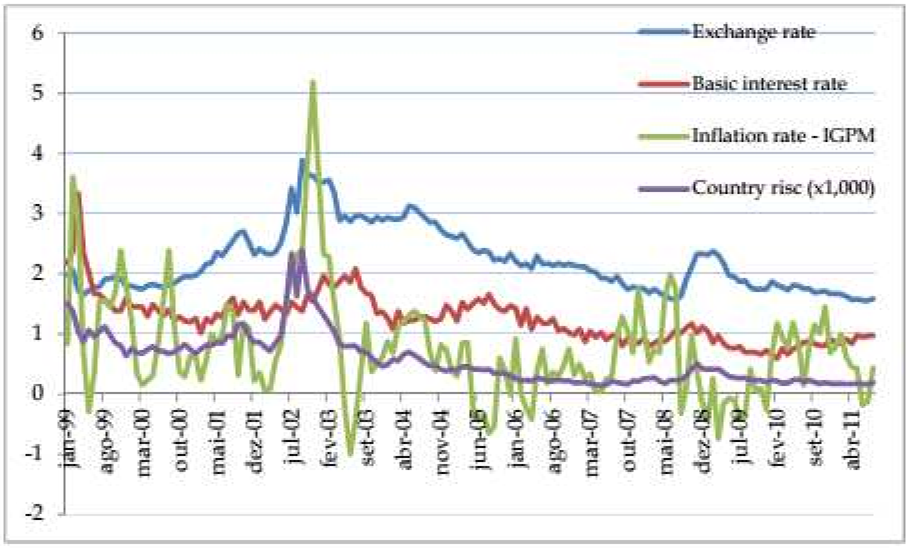
**The economic scenario of the country**

Come1970's Brazil became the leading economy in the Latin American region owing to its industrialization of natural resources and extremely large available labour. Brazil is the eight largest economy in the world and has displayed a steady increase in population area-wise GDP and purchasing power. This stable position came about only in 1998 which was preceded by various plans that continued to prove unsuccessful until inflation as slowly brough under control in 1994. Below is a table indexing a year-wise allocation of both GDP and Inflation.

| YEAR | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GDP% | 0.8 | 4.2 | 1.9 | 1.0 | -0.2 | 5.1 | 2.3 | 3.7 | 5.4 | 5.1 | -0.2 | 7.5 |
| Inflation% | 4.9 | 7.1 | 6.8 | 8.4 | 14.8 | 6.6 | 6.9 | 4.2 | 3.6 | 5.7 | 5.0 | 5.0 |

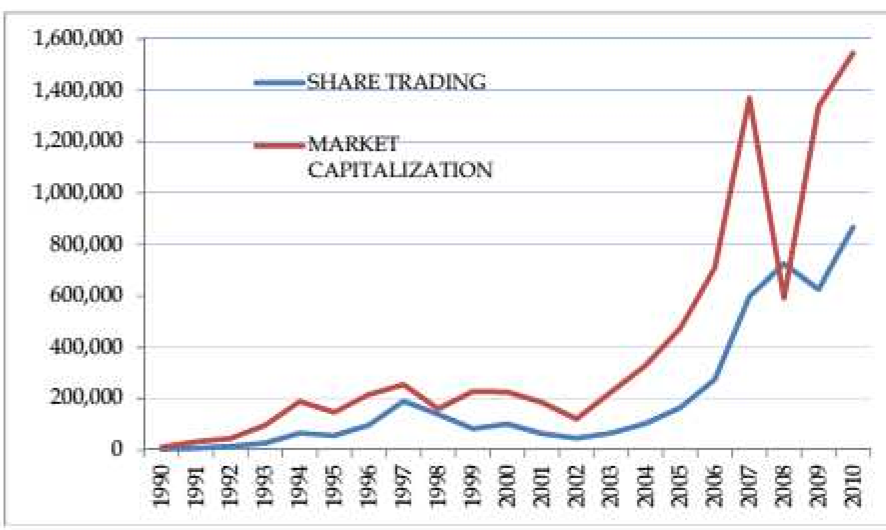
Additionally, exports have shown strong and consistent growth in recent years. According to the Ministry of Development, Industry, and Foreign Trade - MDIC (2011), in 2001 average daily exports totalled US $ 233 million; while in 2011 already exceed US $ 1 billion. However, a large space for growth is still perceivable in comparison with China (6.5 billion per day) and USA (5.3 billion per day).

[24] Boom year for Argentine stocks reflects fear more than confidence, available at: http://www.reuters.com/article/2014/10/03/argentina-stocks-idUSL2N0RY00O20141003




## The Brazilian Stock Market, Bovespa, and CVM

While it is true that the capital market in any economy plays a very importance role in its development, Brazil was not able to take advantage of the same until very recently. A long period of high inflation rate and general economic instability historically exerted serious negative effects of the Brazilian stock marker. The Plano Real was a milestone for the country's stock market and it initiated a vigorous pattern of growth since 2003. This is evidenced as below:




Source: World Federation of Exchanges (2011)

An intense inflow of capital from abroad is in the core of this growth process and due to this Bovespa is now the fifth bourse in the world in foreign investors' participation. The high internal interest rate and the privatization program started in 1997 have attracted considerable amounts of foreign capital except in 2002 (electoral year). Since then Brazil has come to be regarded as an important option for foreign investors. In July, August, and September 2011 foreign investors were responsible for 33%, 34%, and 36% of the Bovespa's trade volume, respectively. While these foreign investments bring many benefits to the country, it also causes several negative effects. This is indicated by the figure below:

| Positive effects | Negative effects |
|---|---|
| Improve the country's international image; | May cause imbalance in the country; |
| Government can finance its deficit for longer terms and lower interest rates; | Possibility of fast reflux of external resources in the presence of negative indicators; |
| Greater opportunities for capital expenditures and costs reduction. | Struggle to prevent flights of capital in the presence of any international instability. |

Founded in 1890, Bovespa assumed institutional characteristics in the 1960s and in 1967 became the Bolsa de Valores de Sao Paulo. Inthe 1990's all the regional stock exchanges in Brazil merged their trading activities under the leadership of Bovespa to create a unique nationwide stock market. In May 2008, after integration with the Commodities and Futures Exchange (BM&F), it was renamed BM&FBOVESPA. Together, BM&F and Bovespa include trading of equities and fixed income securities, both tock markets and over the counter. However, the Bovespa basically involves share trading, options, debentures and a few other securities, while BM&F is devoted to commodities and futures, and also commoditiesand financial derivatives.

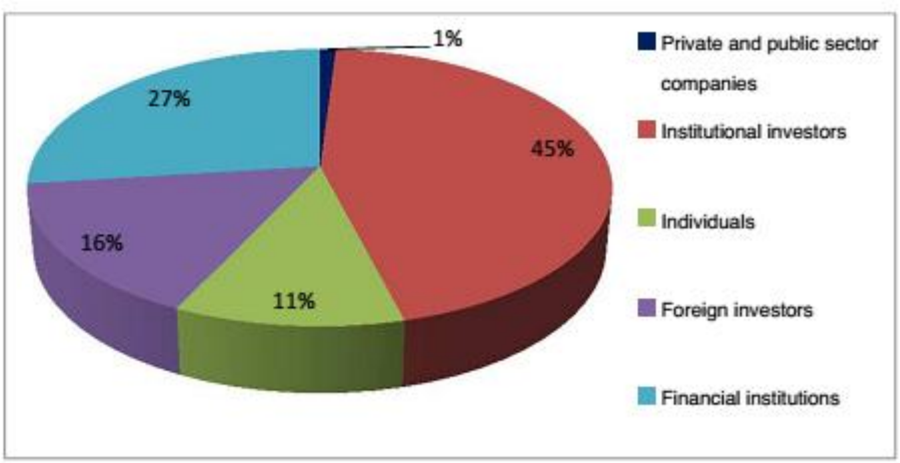
Share trading is the main activity of the Bovespa and follows specific rules. There are three trading channels in the Bovespa: mega bolsa, open-outcry sessions, and aftermarket trading sessions. Regardless of the channel used, onlyauthorized brokers operate share trading. Primary equities are issued through the Bovespa. Private and public sector corporations that meet the registration requirements of the Brazilian Securities Commission (CVM) become eligible to issue equity shares through the Bovespa. Such corporations can count on the market expertise and financial leverage of underwriters to launch stocks on the market. An underwriter may guarantee that the issuer will receive a certain price on the stocks sold.

In 1999 a home broker system was installed to allow investors to easily communicate with the brokerage firm by using the Internet, and its use has been growing ever since. The Brazilian stock market is ruled by the CVM,an agency of the Brazilian government that serves as the primary regulator of the securities trade. It attempts to ensure that all trades are fair, and that no price manipulation or insider trading occurs. CVM was established in 1976 with the objective of regulating and disciplining the operation of the Brazilian capital market. By offering institutional guarantees to investors and the desired operational flexibility, CVM fosters companies' capitalization and economic growth by means of a better allocation of resources.

In order to achieve its objectives, CVM:

- Ensures the efficient, reliable, and equitable functioning of the securities market, and foments its expansion;
- Protects investors and securities holders by avoiding or preventing irregularities, frauds and manipulative practices;
- Guarantees ample and fair disclosure of relevant information concerning securities traded and issuer companies (CVM, 2011).

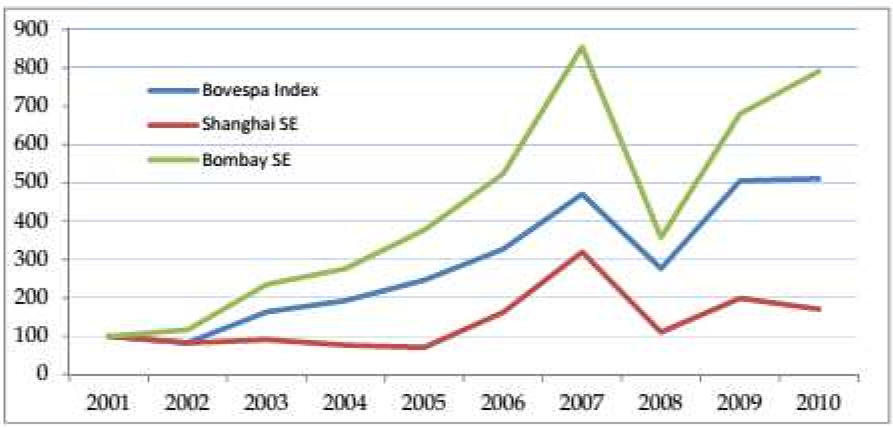
The following figure shows the participation in the volume of the Fundos de Índices(ETFs) in October 2010. These funds are known as offering efficiency, transparency and flexibility in a single investment. The major participants are institutional investors (45.3%), followed by financial institutions (26.6%), and foreign investors (16.2%).



Source: BM&FBOVESPA (2010b)

**<u>The Brazilian Stock Market Dimension</u>**

Bovespa is the largest stock exchange in Latin America, and is also one of the largest in the world. Bovespa's most important index is Ibovespa, whose primary purpose is to indicate the general behaviour of the Brazilian stock market. Ibovespa represents more than 80% of either the number of operations or the value of share trade. The Bovespa's performance in recent years looks impressive both in respect of accumulated earnings and in relation to daily returns, but it is better to make this assessment by comparing its evolution with stock exchanges in other countries, especially the BRICs.




Source: World Federation of Exchanges (2011)

## The Brazilian Stock Market Structure

The Brazilian stock market is highly concentrated in a reduced number of companies in comparison to developed countries. In Bovespa just 8 sectors represent 85.0% ofthe share trading volume and the major 24 companies account for 72.3% of that volume. Petrobras (Oil and gas) accounts for 16.1%; Vale do Rio Doce (Mining), for 13.1%; Bradesco, Itau and Banco do Brasil (banks), for 8.5%; totalling 37.7% of the value of share trading. Not only is the market concentrated, but so is the equity. Okimura (2003) affirms that there is a predominance of controlling shareholdersin the Brazilian stock market, concentrating approximately 76% of vote-entitled shares, and Cavalhal da Silva (2004) states that, on average, the three largest shareholders control Brazilian companies. Table 10 indicates that among the 24 companies representing 1% or above of the Ibovespa, 15 are controlled by the major shareholder and another 3 by the two biggest shareholders. That is to say: 75% of those companies are controlled by one or two shareholders.

## Corporate Governance and the Brazilian Stock Market

The stock market at Bovespa is divided into four segments: Traditional, Level 1,Level 2, and Novo Mercado (New Market). This is the ranking of the four segments according to specific sets of regulatory and additional requirements of corporate governance. Companies in the Novo Mercado may only issue voting (common) shares and voluntarily undertake corporate rules and disclosure requirements which are much more stringent than those already established by Brazilian laws, known as “good practices of corporate governance”. These rules are designed to increase shareholders’ rights and enhance the quality of information provided by companies. Additionally, a Market Arbitration Panel is offered to resolve conflicts between investors and issuers.

CVM, Bovespa, the Brazilian Institute of Corporate Governance (IBGC), and the Brazilian Bank for Economic and Social Development (BNDES) have acted together and created a positive climate in which companies pursue the accomplishment of the established standards of corporate governance by themselves in order to obtain a differentiation in the market and a higher value. The BNDES requires companies to promote the opening of capital and improve their corporate governance practices in exchange for the funding. This important change in the Brazilian stock market, initiated in December 2000, is based on the idea that reduction in investor perceptions of risk presents a positive effect on share values and liquidity. As pointed out by the World Bank: “Bovespa believed that investors would perceive their risks to be lower if two things occurred: they were granted additional rights and guarantees as shareholders; and, if the asymmetry of access to information between controlling shareholders/company management and market participants was narrowed (if not eliminated).” Many have opined hat Brazil is at an advanced stahge in the corporate governance debate, and demand for voting shares, transparency, tag along rights, and other corporate governance rights has increased significantly. In comparison with other countries, experts recognise that the Brazilian experience in respect to corporate governance and stock market is successful. Petra Alexandru compared the Novo Mercadoto Romania’s Transparency Plus Tier and highlighted that in the latter the Romanian Corporate Governance Codes and Principles and the T+Tier were imposed upon listed companies as mandatory requirements. As a result, only one company had applied to be listed on the T+ Tier until 2006. “The positive attitude of the local issuers towards such standards was overestimated.”

**Conclusion**

Brazil presents good economic and social indicators, mainly originating from mid-1990. Once the Plano Realwas established in 1994, the economy went through a period of accommodation that would have ended in 1998 were it not for the instability that plagued the world economy and the proximity of the 2002 elections. Thus, the beneficial effects of stabilization were only made present in a clear and lasting way from 2003. This is very noticeable in the behaviour of the Bovespa. Data on the Brazilian economy, especially since the Plano Real, has led to a growing number of supporters of the government's policy of maintaining a political and economic environment favourable to increasing participation of foreign capital in the country's development, including absence of control. Bovespa concentrates practically the whole stock market in Brazil, and receives a significant flow of capital resources from abroad, but itis not well known yet. Indeed, there are few studies on the Brazilian stock market, and the fast growth process imposes changes that make it still more difficult to properly understand its functioning. Bovespa is comparable in size to the main stock exchanges in the BRICs, the Brazilian stock market is markedly concentrated, and equity control is concentrated in hands of a few shareholders. Studies on the influence of accounting indicators on prices and stock returns in the Brazilian market are still scarce and inconclusive. The Brazilian experience on the classification of stocks as to the standards of management and information made available to the market by issuer companies can be considered a success, especially when compared to other developing countries. In Brazil, companies are encouraged to adhere to different levels of governance, but they do so freely.

## IV. The Volatility of the South African Stock Markets

### Introduction

There is a large body of research that proves the co-movement of international stock markets over time. This co-movement manifests through various instruments ranging from stocks and bonds, to soft commodities and can be visualized as returns and volatility spill-over effects. During the most recent financial crisis, it was once again highlighted that no market is immune to spill-over effects from other international markets. By employing an aggregate-shock (AS) model, returns and volatility spill-over effects of the London, Paris, Frankfurt and New York stock markets to the JSE are confirmed. The JSE All share index is directly affected through contagion by the returns of the economic area where the crisis originates. However, South Africa has progressed in shielding its stock market against financial crises in recent times.

The economy of South Africa is the second largest in Africa, behind Nigeria, it accounts for 24% of its gross domestic product in terms of purchasing power parity, and is ranked as an upper-middle income economy by the World Bank; this makes the country one of only four countries in Africa in this category (the others being Botswana, Gabon and Mauritius). Since 1996, at the end of over twelve years of international sanctions, South Africa's gross domestic product has almost tripled to $400 billion, and foreign exchange reserves have increased from $3 billion to nearly $50 billion.

South Africa, unlike other emerging markets, has struggled through the late 2000s recession, and the recovery has been largely led by private and public consumption growth, while export volumes and private investment have yet to fully recover. The long-term potential growth rate of South Africa under the current policy environment has been estimated at 3.5%. Per capita GDP growth has proved mediocre, though improving, growing by 1.6% a year from 1994 to 2009, and by 2.2% over the 2000–09 decade, compared to world growth of 3.1% over the same period.

South Africa compares well to other emerging markets on affordability and availability of capital, financial market sophistication, business tax rates and infrastructure, but fares poorly on the cost and availability of labor, education, and the use of technology and innovation.

In a 2010 survey, South Africa was found to have the second most sophisticated financial market and the second-lowest effective business tax rate, out of 14 surveyed countries. The country was also ranked fourth for ease of accessing capital, fourth for cost of capital, sixth for its transport infrastructure (considered better than that of China, India, Mexico, Brazil and Poland, but behind that of Korea and Chile), and seventh for foreign direct investment as a percentage of GDP: in 2008 it was over 3% of the GDP.

Nevertheless, South Africa is falling behind other emerging markets, such as India and China, owing to several factors: the country is relatively small, without the advantage of a huge domestic customer base; it has had for decades an unusually low rate of saving and investment, partly because of political uncertainties; an inadequate education system results in an acute shortage of skilled manpower; a strong and volatile currency deters investors and makes its exports less competitive; the infrastructure, though far better than in the rest of Africa, suffers from severe bottlenecks, including power shortages, and urgently needs upgrading.

Johannesburg Stock Exchange

JSE Limited (previously the Johannesburg Stock Exchange) is the largest stock exchange in Africa. In 2003 the JSE had an estimated 472 listed companies and a market capitalization of US$ 182.6 billion, as well as an average monthly traded value of US$ 6.399 billion. As of 31 December 2013, the market capitalization of the JSE was at US$ 1,007 billion.

The JSE was formed in 1887 during the first South African gold rush. Following the first legislation covering financial markets in 1947, the JSE joined the World Federation of Exchanges in 1963 and upgraded to an electronic trading system in the early 1990s. The bourse demutualised and listed on its own exchange in 2005.

The JSE provides a market where securities can be traded freely under a regulated procedure. It not only channels funds into the economy, but also provides investors with returns on investments in the form of dividends. The exchange successfully fulfils its main function—the raising of primary capital—by re-channeling cash resources into productive economic activity, thus building the economy while enhancing job opportunities and wealth creation.

The exchange is directed by an honorary committee of 16 people, all with full voting rights. The elected stock broking members, who cannot number less than eight or more than eleven, may appoint an executive president and five outside members to the committee. Policy decisions are made by the committee and carried out by a full-time executive committee headed by the executive president.

The JSE is governed by its members but through their use of JSE services and facilities, these members are also customers of the Exchange. Although there is only one stock exchange in South Africa, the Stock Exchanges Control Act (repealed by the Securities Services Act of 2004) does allow for the existence and operation of more than one exchange. Each year the JSE must apply to the Minister of Finance for an operating license which vests external control of the exchange in the FSB.

Stock Market of South Africa

Over the past three decades financial markets around the world have become increasingly interconnected. Although emerging economies too have benefitted from global financial integration, they have also succumbed to increased financial turbulence in the form of heightened asset price volatility. The South African financial market was no exception, and was severely affected by financial crises over the past 15 years. Investors in countries affected by these crises may lose confidence in capital markets when sharp asset price fluctuations cannot be explained by fundamental economic factors, leading to a reduction in capital flows towards equity markets. It is therefore important to measure volatility in an attempt to better understand the fundamental economic factors that drive the world economy. In order to fully understand the dynamics of an equity market, it is necessary to be informed where this volatility originates.

The effect of weekly international returns on the JSE is positive and statistically significant during all the periods. This positive association indicates that positive returns on the foreign exchanges are linked to positive returns on the JSE and vice versa. The relationship between these markets and the JSE strengthened over time for the pre-crisis period. The JSE moves more with world markets in 'normal' market conditions (pre-crisis periods) as time goes by (from the Asian financial crisis to the EU Debt crisis), but that market participants on the JSE 'ignore' international news quicker (crisis and post-crisis periods) as time goes by. This is interesting, as it seems that market participants on the JSE incorporated more 'bad news' during the Asian financial crisis, but paid less attention to 'bad news' by the EU Debt crisis. There could be many reasons for this behaviour. It could be that market participants had no real other options because their normal investment choices were exhausted (developed countries still pose a great amount of investment risk). Another explanation could be that the South African financial system has become more resilient to spill-over effects from foreign countries over time. According to the IMF, South Africa's sound regulatory system played an important role in limiting the effects of the Sub-Prime crisis on the local financial system. Factors that contributed to shielding the financial system from instability were; a well-capitalized financial sector and limited exposure of domestic financial institutions to risky foreign assets such as Sub-prime asset backed securities and credit default swaps.

Although the relationship between the foreign markets and the JSE grew stronger as each crisis progressed, this trend seems to dissipate over time. Where all of the markets display higher return spillover effects during the Asian financial crisis and the Dot-com crisis, none of the markets displayed continued growth in integration over the full life cycle of the crisis, by the EU Debt crisis. This is somewhat counter intuitive, since it is to be expected that external shocks would influence the local market more when global macroeconomic conditions are volatile. However, since this trend dissipates over time this emphasizes the fact that returns on the JSE are being influenced more over time during 'normal' market conditions but that these returns move more independently during and after crisis periods as time goes by.

Unlike the pre-crisis volatility conditions where all the volatility leverage effects had a negative asymmetric impact on the JSE, there are instances where positive asymmetric effects are reported for the crisis periods. Market participants seem to react to a greater extent to positive news, and less so to negative news during crisis conditions. This situation is once again reversed during the post-crisis period in that most of the statistically significant leverage effects are negative. These effects are also more pronounced during the period after the Dot-com crisis.

The South African equity market is becoming more integrated in "normal economic" conditions but the JSE experienced reduced returns and volatility spill-over effects in later years. This is evident from the reduction in both the amount and intensity of returns and volatility spill-over effects experienced over the Sub-Prime and EU Debt crises. In order to ensure the future stability of the South African financial system, the South African government has proposed the establishment of a Single Financial market bill. The bill consists of a broad reform of rules and regulations in the financial sector aimed at increasing the stability of banks and insurers, as well as under-regulated products such as derivatives and hedge funds, under bill. This should ensure that the JSE continues to be shielded from contagion effects from foreign countries during crisis periods.

After the Sub-prime crisis, the regulatory scene is also livening up internationally. The most recent example of this is the Volcker rule and the Dodd-Frank financial regulatory reform bill. In essence, from an international and South African perspective, there appears to be a shift towards greater interventionist regulatory framework, which places emphasis on restructuring of the alternative financial market sector and requiring banks to move away from complex "shadow banking systems" towards a more transparent basic banking model, which facilitates easier regulation and oversight.

## CONCLUSION:

Hence it can be seen that in each of the countries there are different factors which affect the volatility of the stock market. Therefore to stabilize the stock markets different strategies ought to be adopted for each of the nations by their regulatory authorities and governmental agencies and institutions.