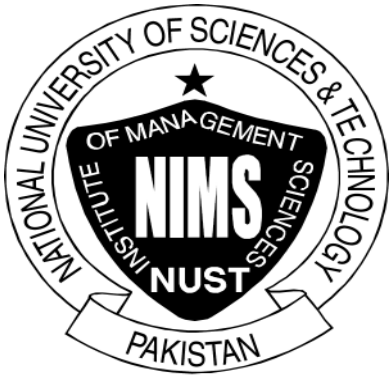


(NIMS)

NUST Institute of Management Sciences

MBA THESIS FINAL REPORT

"ROLE OF STOCK MARKET

&

INDEX NUMBERS"

SUBMITTED BY

AYESHA RASUL
ROLL # 055

MBA 2002-A

SUBMITTED TO
MS. ASFIA OBAID

TABLE OF CONTENTS

TITLE **PAGE #**

EXECUTIVE SUMMARY

The financial system of Pakistan consists of a large number of institutions, instruments and markets. Markets dealing with the trading of financial assets can be categorized as being either formal (as in stock exchanges with centralized trading floors) or in formal (as in over the counter or curb markets). After several years in the doldrums, Pakistan is experiencing a metamorphosis of sorts. In conjunction with a vastly improved policy environment, on-the-mend public finances, a favorable debt trajectory, a reversal of prior capital outflows and easier monetary conditions, the economy is finally turning around. The importance of stock market in the economy can also not be ignored and the stock market of Pakistan has improved a lot in the previous years. International linkages are being considered as positive development as they help fertilize the economy whose base is still very weak, yet too much reliance on foreign sources can pose serious dangers. Stock exchange not only helps in resource mobilization but it has the dimension of transfer of ownership within the economy; this kind of trading however, mostly takes place without making real contribution and physical expansion of the economy. With in the stock exchange are the index numbers used for giving the trend in the economy. in case of Pakistan although the stock market ahs improved a lot in the past years but there are certain areas where it needs to improve upon and those have been analyzed the report.

ACKNOWLEDGEMENTS

First of all I would like to thank Al Mighty Allah for giving me the strength, opportunities and most all ability to complete thesis successfully.

Ms. Asfia Obaid

I am greatful to my supervisor Ms. Asfia Obaid for helping me throughout the research project. She had been a great help and the project has been completed with her guidance and support.

Mr. Sabir Hussain Jafri

Mr. Sabir was my thesis committee memeber. He was very helpful and provided the required information and guided to his fullest.

Col Ghulam Rasul

The moral support from my father was very encouraging as this was a very comprehensive project and I was able to complete it with his support and encouragement.

ABSTRACT

The main objective of this project study was to identify the role of the stock market in the economy of Pakistan. Studies show that Stock markets play a very important role in enabling the economy to grow. So in order to find out the role of the Karachi Stock Exchange in building the economy, the stock exchange has been studied in depth taking in to account various factors that the stock exchange is ignoring. The KSE 100 Index is also studied in detail to find out its role. The index is compared with the international indices in various terms. This has enabled to explore whether the index numbers represent the economy or not. It is said that the index numbers are the barometer of the economy. Keeping this phrase in front the study has been carried out. By analyzing the two basic questions of stock market and index number various conclusions have been drawn out and recommendations are also given on those conclusions for the improvement and enhancement of the performance of the stock market both in terms of efficiency and effectiveness.

REFERENCES

- Charles P.Jones ., 1989, Investment Analysis & Management, New Jersey: Prentice-Hall
- Donald E. Fischer and Ronald J. Jordan ., 1975 to 1995, Security Analysis & Portfolio Management, New Jersey: Prentice-Hall
- J. Kimball Dietrich ., Financial services & Financial Institutions, New Jersey: Prentice-Hall
- Reilly, Frank T. Griggs, and Wenchi Wong ., Determinants of the aggregate Stock Market, Journal of Portfolio Management.
- Gray Williams S ., The Anatomy of a Stock Market Forecast, Journal of Portfolio Management.

- www.google.com
- www.finance.gov.pk
- www.boi.gov.pk
- www.kse.com.pk
- www.lse.com.pk
- www.ise.com.pk
- www.sbp.org.com
- www.google.com
- www.nyse.com
- www.alltheweb.com

CHAPTER # 1 RESEARCH METHODOLOGY

Research for the thesis was carried out in accordance with the following steps:

1.1 OBSERVATION

- Broad area of research interest identified

Broad problem area refers to the entire situation where the possible need for research and problem solving is seen. In stock exchanges of Pakistan it is seen that the stock markets and their index numbers have not been the true representative of the economic growth and prosperity. It is also expected that they might have been misleading at times. So the broad problem area is to study the index numbers used by the stock markets and the stock market as a whole. It is a conceptual issue that needs to be seen and altered if required.

1.2 PRELIMINARY DATA GATHERING

- Literature review and initial data gathering

Here the entire stock exchange of Pakistan was thoroughly studied keeping mind the following three points:

  - Background information of the organization
  - Managerial philosophy, company policies, and other structural aspects.
  - The working and input of the organization in the economy.

Certain types of the information such as company information, background details of the company were already there and were simply taken from their available published

records, website of the company and other sources. Data gathered from such existing sources is known as secondary data i.e. it is the already available data. Secondary data was also collected from Government publications, information published or unpublished and available from either within or outside the organization etc.
The primary data was collected by directly visiting one of the stock exchanges and talking to the people there and through analysis of the organization.

After collecting all the above mentioned data it was compiled in the form of literature review. The purpose of the literature review is to give a complete picture of the situation in the stock market of Pakistan and its working and performance over the years. This information is very important to be equipped with the knowledge of the situation in hand and to be able to analyze it later on.

1.3 PROBLEM DEFINITION

- Research problem delineated & hypothesis development

Here the problem does not mean that something is seriously wrong and needs to be fixed immediately. Here by the problem it is meant to improve a certain situation by analyzing it and giving alternatives for its improvement. Thus it is always useful to define a problem as any situation where a gap exits between the actual and the desired ideal states. Here in this case, the problem revolves around two main hypothesis questions:

- Whether the stock market is enabling the economy to grow?
- Are the index numbers the true representative of the market and the economy as a whole?

The entire report is based on these two main questions and deal with them in detail giving the reader a clear picture of what is going on. By going through the research report the reader will automatically understand the state of affairs and the solutions that have been given in the end.

1.4 ANALYSIS

- Identifying the role of local stock market in the economic growth with the help of hypothesis

- Analyzing the KSE 100 Index in terms of composition and the formula by comparing it with world top indices.

1.5 CONCLUSION

It has been concluded in this research and comprehensive study of stock market of Pakistan that the stock market is performing quite well in the economy apparently but there are certain hidden factor and discrepancies in the Index composition that do not depict the true picture of the Pakistan economy. These hidden factors have been analyzed thoroughly in the analysis portion of the study.

CHAPTER # 2 INTRODUCTION

2.1 ECONOMIC GROWTH AND FLUCTUATING FINANCIAL MARKETS

Pakistan's economy is small, lacks depth and is growing. It has a bigger potential than the one that has been exploited thus far. It is fearful of liberal trade. It wants capital inflows particularly FDI but has not been attracting it because of a number of factors that include inadequate financial systems and human resource, poor economic and political governance, narrow financial market and inadequate capacity to absorb capital. Over the past three years a number of distortions have been removed but a lot more is still to be done to develop country's capital market within the framework that suits emerging economies. The challenge is too big to be left at its own, as has been tendency among managers of national economy. The excess liquidity has highlighted inadequacy of financial systems and market on one hand and has thrown the challenge of utilizing it for economic growth on the other hand.

2.2 FLUCTUATING FINANCIAL MARKETS

Financial markets are prone to reacting rapidly to the winds of uncertainty. The only effective way to containing their rapid collapse, once it sets in, is the strength of financial institutions like banking sector, stock markets and currency. If these institutions and currency do not show up their inner strength in moment of crises expected out of them, collapse of financial markets takes toll in the form of sovereign debt default, capital flight, currency crises, bank failure and stock market crash.

Financial collapse adversely affects right across domestic economy as strength of financial market positively affects economic growth. Collapse of a financial market has

infectious affect also. Regional economies are affected by it and if region's share in world economy is substantial the ripples are felt worldwide.

According to Economist, 'financial crises of the sort that hit Latin America in the 1980s, cause recessions equivalent to years of growth foregone. The 1980s were aptly called Latin America's 'lost decade'. Argentina and Brazil, are even now struggling respectively, with an exceptionally severe recession and the threat of a new financial collapse. Financial distress is a salient ingredient in Japan's endless economic difficulties, in Europe's current slow down, in the fragility of America's economic recovery. And if things grow suddenly worse in any of these places, finance will spread the damage far and wide.'

US economy during past more than two years has been passing through economic recession. Federal Reserves have been cutting down on interest rate since then and has reduced it to 1.25 per cent. It has affected US financial market. Investors are reluctant to invest in a market that is offering less return and dollar is depreciating. Apart from recessionary trend in economy, financial market in US has been affected by September 11 attacks, US war against international terrorism and much feared war against Iraq that could have sent price of oil sky high.

2.3 FINANCIAL MARKETS TREND IN DEVELOPED, EMERGING AND DEVELOPING ECONOMIES

Financial markets are prone to quick collapse in developing countries because the financial institutions there do not have that much maturity, strength and regulatory control, which developed economies, have. That is why according to estimates made by analysts 'by the end of 2001 (the latest year for which figures are available) the worldwide stock of across border bank loans and deposits was $9 trillion. Of that, only around $700 billion was attributable to developing country borrowers. The stock of global cross border investment in securities was some $12 trillion of which developing

countries borrowers accounted for just $600 billion.' US despite slowing down of its economy attracts huge amount of foreign capital. According to one estimate, it 'foreign liabilities currently stand at more than 20 per cent of GDP.'

Financial markets, particularly in emerging economies have shown preference for FDI over portfolio flows and a strong preference for either of these over bank loans. Bank lending has fallen, and securities have shown increase and FDI despite difficulties. The reason for this is perhaps that it is less risky and more profitable. According to one estimate, FDI inflows to emerging markets 'increased from $5 billion in 1980 to $24 billion in 1990 and $160 billion in 2000. Net portfolio investment has increased too from about zero in 1980 to $26 billion in 2000.' A pertinent question is: how has financial market in Pakistan fared in the ever-changing world of financial markets?

2.4 FINANCIAL MARKET OF PAKISTAN

Seen in historical and contemporary context, financial market in Pakistan was and continues to be the banking sector - centric. According to one estimate, banks account for around 85 per cent of total financial assets of the country. The banking sector remains dominated by the state and is highly protected. Despite a lot of persuasion and substantial financial assistance provided by the WB, the banking sector has remained largely tied down to the legacies of the nationalized era of 1970s which made it inefficient, corrupt and loaded with high cost of intermediation. To its 'credit', it has around Rs278 billion NPLs. The other instruments of financial market are stock market, NSS, NBFIs and inflows from IMF, WB, and ADB. Each instrument except inflows from donors has its own history, which does not make a good reading in case one was to assess their role in providing strength and depth to country's financial market and facilitating economic growth. Ironically they played a role, which in certain respects negatively impacted the financial market and economic growth.

Banks have been attracting about 60 per cent of public deposits of all sorts but the deposits account for around 56 per cent of GDP. This is much less than that of India where bank deposits account for around 150 per cent of GDP. This is because the government in order to meet the demand for financial resources introduced NSS, which till 2001 offered much higher interest rate compared to banks. Around 34 per cent public deposits are with NSS. Their volume is estimated to be around at Rs600 billion.

Along with banking sector and NSS there has seen growth of a number of NBFIs. According to one estimate, financial market comprises 16 DFIs, 41 investment companies and mutual funds, 13 investment banks, 33 leasing companies and 55 insurance companies. Despite such large number, they account for around five per cent of total financial assets in the country. This percentage is too low and explains the shallowness of financial market in the country. The market needs to be developed on sound financial market regulations compatible with international standards that should put investors at ease, attract investment and facilitate economic growth. A strong financial market, in imperative in case Pakistan aspires to become one of the world's emerging economies by achieving higher growth rate and expanding financial market.

2.4.1 POST-SEPTEMBER 11 STATUS OF FINANCIAL MARKET IN THE COUNTRY

The financial market got three major setbacks that impeded its growth. The first setback came in mid-70s when banks were nationalized. They continue to suffer from the malice of nationalization till now, despite a number of measures taken by the SBP during the past three years to improve their performance. Privatization of three major banks is still to be done to make them competitive. Banks got a boost in liquid assets because of September 11 attacks in US. Washington and other western capitals started chasing 'hundi' and bank accounts of Pakistanis (and Muslims of other countries). Consequently, inflow of capital increased to the banks because of remittances and transfer of liquid

assets staked in western banks. This has resulted in excess liquidity available with the banks.

The second setback came with the introduction of NSS, which offered high interest rate on deposits. It attracted investment from financial institutions for this very reason. Instead of exploring the market with new products to facilitate economic growth through say SMEs, they preferred to stack liquid assets in NSS. High interest rates and inflows to NSS distorted financial market for quite sometime till the government came under pressure from IMF and WB. During the past two years they have been reduced to nearly half but they are presently nearly double the interest rates offered by the banks.

The third set back came during the decade of 90s when the governments went bizarre to take bank deposits for a ride. Loans were granted on political grounds without ensuring that banking rules were fully adhered to with the result that amount of NPLs increased exponentially. It increased the cost of running banks. They, in order to remain in market, increased the interest rates that reached 20 per cent. During the past three years the SBP has come a long way to reform banking sector, reduce interest rate and impose financial discipline on the banking sector.

Financial market got boost during post-September 11 because of a number of positive developments that were a direct consequence of foreign policy measure of aligning Islamabad with Washington in war against international terrorism. These developments included removal of economic sanctions that were imposed by US after nuclear explosions in 1998. These embargoes had starved financial market of foreign capital, trade concessions by EU and Washington, completion of SBA in 2001, cheap credit of $1.4 billion by IMF under PRGF, financial assistance provided by a number of western capitals in return of support war against Kabul, debt rescheduling of $12.5 billion by the Paris Club and liberal inflows from WB and ADW under counter development projects. Despite these positive factors, foreign direct investment remained meager.

All these factors had a cumulative effect on the stock market. Karachi Stock Exchange created history on 16 May when it broke the 3000-point barrier. It gained around 2000

from its low average of around 1005 point's four years earlier (1998-1999). KSE 100-share index rose around 450 points from January this year and market capitalization increased from Rs561 billion to Rs660 billion. It has adjudged an outstanding performance for this very reason, some of the brokers have declared KSE 'best performing market in the world' at a time when stock-markets around the world are struggling to put up a good show. SECP has played an active and positive role in ironing out problems of stock market.

2.4.2 HOW DO WE ACCOUNT FOR THE LINK BETWEEN ECONOMIC GROWTHS IN THE COUNTRY BECAUSE OF SUDDEN SURGE IN FINANCIAL MARKET?

It is difficult to come up with a definite answer at this stage, as more data is required to establish a definite and quantitative link. But, there is hardly any doubt that financial market, whatever its constraints in broader sense, has played a positive role in achieving 4.5 per cent growth rate, the projected target of economic growth rate for the current fiscal year. The government plans to revise upward, the target of economic growth rate by about 0.7 per cent for next FY. It could do so because it feels confident about the financial market, which has enough surplus money, ready for utilization. Private sector has taken thus far Rs100 billion for investment.

Financial markets are an important need of managing economies in the free market environment. Free markets do not grow on their own, they have to be nurtured and taken care of with a lot of acumen and regulations. They are prone to reacting spontaneously to the uncertainties even if they were speculative. The best way to safeguard them is through transparently executed and institutionalized regulations, which must win the confidence of investors and general public.

Financial market in Pakistan is yet to come out of the shell of banking sector. It has a long way to go to mature. It has passed through a number of phases, which have not affected it positively. Over the past three years, it has stabilized because of prudent

policies executed by the SBP and finance ministry. But, it got a real boost because of September 11 attacks. Enough capital has flown into the market. Can the public and private sector really exploit for higher economic growth? It is a prime question that managers of national economy need to address in next budget.

2.5 CAPITAL MARKET

Capital market plays a significant role in direct mobilization of surplus funds in the economy and diverting these to productive investment without the help of banks. Equity and corporate debt markets are the main constituents of capital market. Realizing the vast potential of expansion in direct deployment of funds in stocks and corporate bonds, a capital market reform program was initiated in early 1990's and gathered momentum after 1999 with the establishment of Securities and Exchange Commission of Pakistan (SECP)11.

For effective supervision and growth of capital market, SECP enacted various laws, rules, and guidelines to improve the regulatory framework of the markets in general and of the stock exchanges in particular. Several improvements were made in trading and settlement system of the stock exchanges and Central Depository Company (CDC). In addition, federal government took several steps to reduce policy and regulatory constraints faced by market participants.

The government also rationalized tax anomalies for the equity markets. After extending exemption on capital gains on listed securities until 2001, in 1997, the Government has announced further extension in exemption till 2004. Also, tax on bonus shares and turnover tax on shares was abolished through the Finance Act, 1997. In addition, all provincial governments were advised by the federal government to reduce the stamp duty on the transfer of securities for the CDC transactions from 1.5 to

0.1 percent. As regards rationalization of tax rates on asset-backed securities, significant tax concessions have been announced through the Finance Ordinance, 2001, which includes allowing payment to special-purpose vehicles on behalf of the originator to be

tax deductible. Payment on account of securitization of receivables by special-purpose vehicle has also been exempted from withholding tax. As an important step, the government progressively liberalized the investment restriction on institutional investors. According to the new Insurance Ordinance promulgated on August 19, 2000, the minimum requirement of investment of investible funds of life insurance companies in government securities is 40 percent. Immediately prior to the promulgation of the Ordinance, the minimum requirement was 50 percent while in 1997 the requirement was 60 percent. Also the investment cap was raised for provident funds to invest in stocks and listed corporate fixed income securities from 10 to 30 percent.

2.5.1 SUPERVISORY ROLE OF SECURITIES AND EXCHANGE COMMISSION OF PAKISTAN (SECP)

The SECP has been empowered to administer the Securities and Exchange Ordinance, 1969, Modaraba Companies (Floatation and Control) Ordinance, 1980 and Companies Ordinance, 1984. In August 1999, regulation of the insurance sector was also transferred to the SECP and the SEC Act was amended on October 11, 2000 in this regard. In order to improve the regulatory framework of capital market, SECP enacted various laws and guidelines with a view to consolidate enforcement and monitoring, rationalize trading practices, improve risk management, and enhance corporate governance.

2.5.2 CONSOLIDATION OF ENFORCEMENT AND MONITORING

Securities and Exchange Ordinance, 1969 has been amended on September 8, 2000, to strengthen SECP enforcement and monitoring of the stock exchanges and brokerage houses. In order to strengthen the regulatory framework of the stock market and to facilitate the implementation of the SECP reform agenda, a number of rules and regulations were issued to prescribe minimum standard of market intermediaries12; enhance monitoring of brokers and agents13; motivate and facilitate employees in

acquiring a greater share in their companies share capital14; specify and streamline the eligibility criteria for share transfer agents, underwriters, balloters and consultants to issue15; and establish a direct regulatory nexus with brokers and agents to ensure investors protection16.

2.5.3 RATIONALIZATION OF TRADING PRACTICES

In order to protect small investors against excessive price volatility due to the use of privileged information, the SEC implemented the "Listed Companies (Prohibition of Insiders Trading) Guidelines" on March 27, 2001. These guidelines increased the degree of transparency in the market and gave protection to small investors from possible losses. In order to implement these new rules, SECP has been authorized to investigate and inspect the accounts and records of individuals deemed to be insiders and associated members of the stock exchanges. In addition to this, internationally accepted T+3 settlement system has been introduced and successfully implemented at the three stock exchanges during FY02. This system was implemented gradually to address various objections from the traders. The SEC also introduced the undisclosed market trading system in line with the international practice. This step is expected to check manipulation and front running to a certain extent. On October 7, 2002, KSE launched this trading system where the identity of the buyer and seller is not disclosed. This is aimed at discouraging a "herd" culture where small investors try to mirror the activities of larger players in hopes of speculative gains rather than investing on the basis of stock fundamentals.

2.5.4 IMPROVEMENT IN RISK MANAGEMENT

In order to improve the risk management and governance at stock exchanges, procedures were introduced in the Securities and Exchange Rules, 1971 to redefine net-capital of the stock exchanges in line with internationally accepted best practice. In addition, the

requirement for net-capital balance has been enhanced by 10 times to Rs 2.5 million for the KSE, Rs 1.5 million for LSE and Rs 0.75 million for the ISE.

Also, a measure of capital adequacy for stockbrokers has been stipulated. The exposure of a broker must not exceed 25 times the net capital employed. This would reduce the magnitude of excessive speculative activity. Moreover, the margin requirements have been strengthened; notably the brokers' ability to trade up to Rs 50 million without margin was abolished and all exposure of brokers is now subject to margin. In order to reduce the systemic risk17 at the stock exchanges, circuit breakers were introduced to reduce excessive volatility in the prices of scrips. They protect clearing-house from large defaults caused by extreme market movements. In addition, these protect brokers and investors from defaults due to price fluctuations, even when these individual defaults do not endanger the clearing-house. Currently, the following design is being used in all three local exchanges.

- For downward circuit breakers, during a day, price of scrip cannot fall below 5% or Rs 1, whichever is higher, from the closing price of the previous day.
- For upward circuit breakers, during a day, price of a scrip cannot rise more than 7.5% or Rs 1.5, whichever is higher, from the closing price of the previous day. In addition, stock exchanges have established investor protection funds and the clearinghouse protection funds under the instruction of the SECP.

2.5.5 ENHANCING CORPORATE GOVERNANCE

For the purpose of establishing a framework of good corporate governance whereby a listed company is managed in compliance with best practices, SECP issued the *"Code of Corporate Governance*" on March 28, 2002. Accordingly, all stock exchanges included the code of conduct in their respective listing requirements. This comprehensive law aims at enhancing investor confidence by increasing transparency in the business practices of listed companies. It envelopes diverse areas of corporate governance including guidelines on the constitution of the Board of Directors of the company; a framework of internal

control; rule on financial and accounting responsibilities of directors; directors' report; disclosure regarding pattern of shareholding; and scope of internal audit, etc.

Another important step was to improve the corporate governance of the stock exchanges and reorganize them to improve their management and operational efficiency. This process was initiated by SECP in end-December 2000 and completed in September 2002. To attain this objective, the following reforms have been implemented with a view to improvements in governance:

- 40 per cent independent directors are to be nominated by the SECP on the Board of each stock exchange after due consultation. In 2001, seven non-broker directors were nominated on the Boards of the KSE and the LSE and five directors on the Board of the ISE.
- Independent professional management has been ensured in the exchanges by requiring the Managing Director/CEO of each stock exchange to be appointed and removed with the approval of the SECP. Independent CEOs have already been appointed at the KSE and the LSE, with the prior approval of SECP.
- The directors of each exchange have been directed not to delegate their operational powers to any person other than the Managing Director.
- The number of broker-directors in the CDC has been reduced from five to three (out of a total of nine).
- The Chairman of the CDC is to be a non-broker.
- The Board of Directors of the CDC is required not to delegate their operational authority to anyone except the CEO.
- The SECP has nominated a director on the Board of the CDC. Also to encourage corporatization of members of the stock exchanges, exemption has twice been granted to sole proprietorship and partnership members of stock exchanges from capital gains arising out of the conversion.

2.5.6 IMPROVEMENTS AND MODERNIZATION OF SECURITIES MARKET INFRASTRUCTURE

An important component of the reforms was to improve the infrastructure at the stock exchanges.

This envisaged elimination of open outcry system at the stock exchanges and adoption of harmonized automated trading system by all the stock exchanges; development of a Central Depository and development of a National Clearing and Settlement System. Accordingly, all three stock exchanges are fully automated now and old open outcry system has been abolished.

For introducing an efficient delivery, settlement and transfer of securities through a computerized book entry system, a Central Depository Company of Pakistan Limited (CDC) was established. The Central Depository Act, 1997 was promulgated on June 7, 1997 and regulations under the Act were issued on June 25, 1997. The CDC became operational on September 03, 1997 starting with only one scrip. However, all listed securities were declared to be eligible securities for induction into CDC by June 23, 1998. By end-December 2002, out of 819 declared eligible securities 406 were active at CDC. Also CDC was managing 7244 individual and 293 corporate accounts. CDC also started operations with custody services. It is now offering Delivery vs. Payment services, which are covered by the CDC Act and Rules. The CDC has been appointed as custodian for ICP's 13 mutual funds and also provides trustee services to three private sector open-end mutual fund.

Another important objective of the reform process was to modernize and centralize the clearing and settlement system. A national clearance and settlement system was established and operationalized on December 24, 2001 by the National Clearing Company of Pakistan Limited (NCCPL). NCCPL has been incorporated (July 2001) with paid-up capital of Rs 35 million, contributed by the three stock exchanges. The NCCPL has its own Board of Directors and Chief Executive. In order to monitor system performance and to give enough time to the clients to get used to the system, it was decided by the management to start with two relatively less active scrips. However, by December 31, 2002 there are 308 securities being cleared and settled through this system.

Establishment of NCSS is considered as a big leap forward to reducing the risk factor. NCSS operates on a T+3 systems on a daily rolling settlement.

2.5.7 PERFORMANCE OF THE STOCK EXCHANGES

The Karachi Stock Exchange maintained its standings as the premier market in the country.

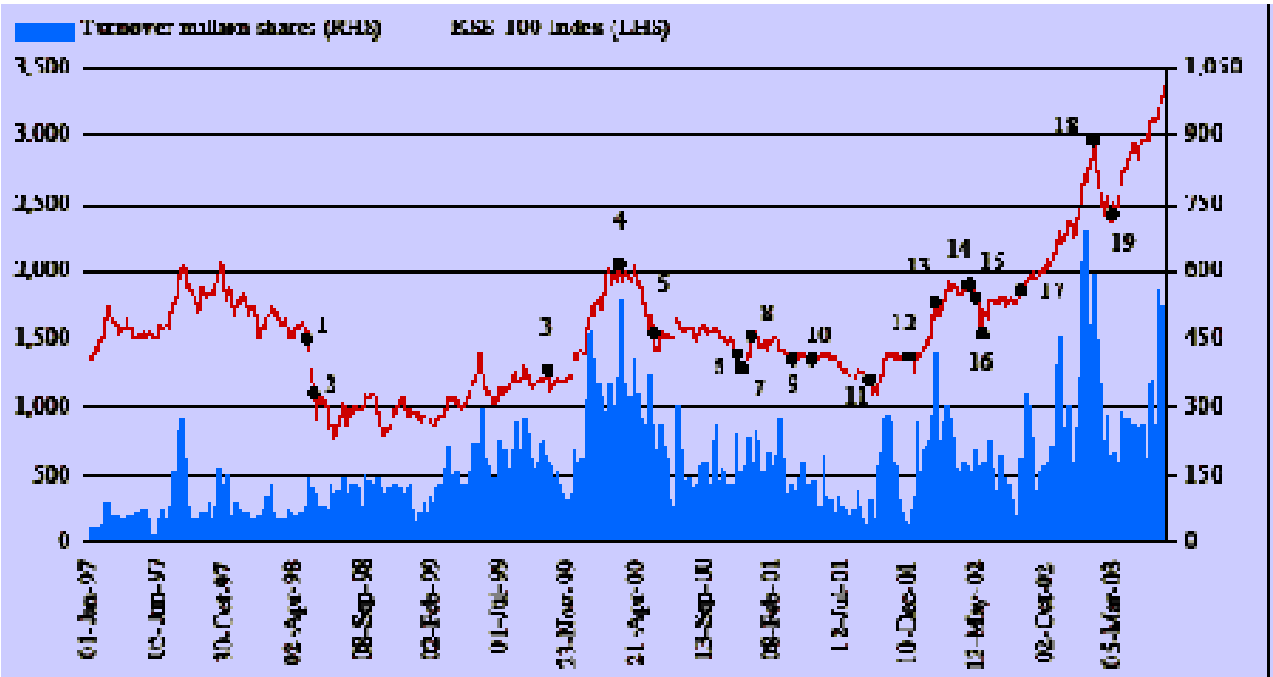
The KSE-100 index recorded a growth of 16.4 percent from FY00 to FY02 (see **Table** for data on KSE). During the period, various factors influenced the KSE-100 index. These include changing regulatory environment due to implementation of reform process by the SEC, the problems with the carry over trade, the September 11, 2001 attacks on the world trade center in New York and geopolitical situation in the region (see **Figure**). During this period, SECP implemented various laws and directives to improve the performance of the stock exchanges and to bring their operations in line with the best international practices. These include the changes in the Article of Association of the stock exchanges to improve their corporate governance, implementation of internationally acceptable T+3 settlement system and enforcement of risk management measures at the bourses.

Although market participants initially showed some reservations on the pace of implementation of these changes but afterwards accepted these.

	FY98	FY99	FY00	FY01	FY02	FY03
Total number of listed companies	779	769	762	759	725	705
Total listed capital (Rs billion)	211.3	215.0	229.0	239.9	260.6	300.9
KSE-100 index	879.6	1,054.7	1,520.7	1,366.4	1,770.1	3,402.5
KSE all share index	586.8	675.4	942.7	870.4	1,118.8	2,168.5
SBP General Index of Prices	98.8	106.4	128.8	89.7	106.7	204.9
Initial public offering (IPO) during the year	2	0	3	4	4	2
New debt instrument listed during the year	3	2	3	2	10	14
Trade volume during the year (million shares)	14,994.4	25,524.8	48,097.0	28,858.9	28,852.4	52,740.6
Market capitalization (Rs billion)	262.4	287.9	394.4	341.8	411.6	755.8
Value of shares traded (Rs billion)	509.6	605.3	1,877.8	1,073.0	804.4	2,270.6
Average daily turnover (million shares)	63.8	103.4	193.2	119.5	120.9	214.3
Trading days	235	247	249	244	241	246
Turnover ratio	1.0	2.1	4.8	2.9	2.2	4.1
Foreign investment (US$ million))	221.3	27.3	73.5	-140.4	-10.1	24.0

Source: Karachi Stock Exchange & Statistics Department, SBP.

FIGURE: KSE 100 INDEX AND TURNOVER



1. India detonated nuclear device. May 11, 1998
2. Pakistan went nuclear. May 28, 1998
3. Change of Government, October 12, 1999
4. KSE-100 Index at 39-month high of 2054.43
5. Trading remained suspended because of settlement problems by some of KSE members on May 30, 2000
6. SECP prohibited blank selling, November 2000
7. Pakistan managed to secure SBA with IMF, end-November 2000
8. SECP ordered change in Article of Association of KSE on December 31, 2000. This was to improve the corporate governance of the stock exchanges and reorganize them to improve their management and operational efficiency.
9. T+5 settlement system was initially introduced in two scrips (Telecard and Ibrahim Fibre) on April 2, 200.
10. Decision to defer the implementation of T+5 settlement system for couple of months in mid-May 2001
11. Terrorist attacks in New York caused jitters in the market, September 11, 2001
12. Terrorist attack on Indian Parliament. Market sustained the shock initially but fell a few weeks due to extreme measures taken by Indian government
13. KSE-100 Index fell due to enforcement of minimum capital adequacy requirement for brokers
14. Presidential referendum, April 30, 2002
15. Terrorist attack in Karachi, May 8, 2002
16. The KSE-100 shed 8.38 percent in last 15 days of May 2002 due to escalation in tension with India
17. Start of rally driven by good corporate performance and unprecedented liquidity in the market
18. The upturn, driven by excessive liquidity, was broken due to hike in badla financing rates (as brokers faced capital adequacy limits) forcing weak holders to sell.
19. However, market fundamentals (good corporate results, attractive market valuations) and liquidity forced start another rally.

As can be seen from **Table** that primary market activities in equity remained low as only 8 new companies got listed at KSE during FY01 and FY02. However this trend has been there since FY97.

Before that financial sector liberalization of early 1990s coupled with the regulation that all new financial sector companies (like Modaraba, Leasing, Investment banks, Commercial banks, etc.) had to list themselves, provided boost to new listings. KSE witnessed new listings of 303 firms during FY91 to FY95 period with highest of 99 in FY92. Another driver in this regard was the high cost of raising funds from the banking system as average discount rate from 1991-95 was 15 percent. Unfortunately latter, this trend of listing slowed down. The reason for the slow down in the listing activity after FY96 could be attributed to the general slow down of the economic activities in the economy and uncertainty on domestic and international political front. Also, improved disclosure requirements by SECP to protect shareholders may have contributed to the reluctance of the promoters to list their companies at the bourses. Contrary to slow listing activities in the market, delisting is on the rise as 06 and 40 companies were de-listed during FY01 and FY02 respectively.

However, 16 of these companies were de-listed due their merger with other firms. In addition, market concentration was very high at KSE, as top 25 companies (turnover wise) cover approximately 51 percent of market capitalization at the end-June 2002.

million Rupees

	Company	Date of Listing	Total Paid up capital	Amount		Subscribed by underwriter
				Offered	Subscribed	
	FY01					
1	Dewan Farooq Motors	31-Jul-00	734.0	185.0	226.0	-
2	Al-Meezan Inv. Bank Ltd	4-Aug-00	901.0	148.0	35.8	171.2
3	Bestway cement	9-Apr-01	1,934.7	200.0	205.0	-
4	Arif Habib Securities	25-Jun-01	50.0	99.0	434.6	-
	FY02					
1	Fayzan Manufacturing Modarba	20-Dec-01	900.0	540.0	6.1	533.9
2	WorldCall Multimedia	4-Jan-02	530.0	132.0	21.4	110.6
3	National Bank	18-Feb-02	3,730.4	373.0	1,033.2	-
4	Attock cement	28-Jun-02	680.3	100.0	31.1	68.9
	FY03					
1	Bosicor Pakistan Limited	15-Jul-03	1,377.6	272.0	42.2	230.3
2	Ittehad Chemical Limited	14-Apr-03	250.0	62.5	39.9	-

billion Rupees, shares in million

	LSE			ISE		
	Listed companies	Turn over	Paid up capital	Listed companies	Turn over	Paid up capital
FY96	640	2564.8	119.4	272	154	84.1
FY97	645	2775.6	184.7	283	115	92.4
FY98	631	5848.2	186.9	285	478	149.4
FY99	621	9798.7	186.9	284	180	150.7
FY00	616	16356.9	207.7	283	2012	162.2
FY01	614	7848.3	226.2	281	747	183.3
FY02	581	18281.2	246.3	279	1658	180.6
FY03	561	28191.6	280.09	261	1606	232.7

Being the smaller stock exchanges, Lahore Stock Exchange and Islamabad Stock Exchange closely follow the Karachi Stock Exchange. The reason for this is the fact that the companies listed at these stock exchanges are a subset of companies listed at Karachi with few exceptions. As in the KSE, listed companies at LSE and ISE too declined.

CHAPTER # 3 LITERATURE REVIEW

3.1 STOCK MARKET

3.1.1 WHAT IS STOCK?

Stock is ownership in a company, with each share of stock representing a tiny piece of ownership. The more shares you own, the more of the company you own. The more shares you own, the more dividends you earn when the company makes a profit. In the financial world, ownership is called equity.

There are two primary classes of stock. The one you choose depends on what you want from a stock. Preferred stock typically pays regular dividends and is favored by investors who want income foremost from their stocks. Common stock represents ownership of a company and may offer more rights and privileges than preferred stock.

Investors may purchase stock on the primary or secondary market. A company sells its stock to the public on the primary market through its initial public offering. Investors may sell their shares through brokers to other investors on the secondary market. The secondary market can be structured as an auction market, like the other exchanges, or a dealer market, like the NASDAQ. Stock prices can be found (quotes) in newspapers, on television and the Internet.

3.1.2 WHY DO COMPANIES ISSUE STOCK?

Businesses issue stock to raise money. They use this money to finance expansions, pay for equipment, and fund projects, etc. Corporations issue stock when they may need additional capital to operate successfully.

The fancy term for issuing stock to raise money is equity financing. The money received from investors who buy stocks is called equity capital. In the world of securities, the word "equity" usually refers to stocks. The other method of raising money is debt financing, which involves selling bonds. That is the subject of other tutorials.

When companies make profits, they may reward their stockholders with pieces of their profits, known as dividends. Dividends are an incentive for investors to hold stocks.

Now that you know the why of buying stocks, you will need to know the where.

3.2 WHAT ARE STOCK EXCHANGES?

Exchanges are the physical locations where stocks are bought and sold. They are the sisters of the over-the-counter (OTC) market. The OTC refers to a market in which securities transactions are conducted through a telephone and computer network connecting dealers in stocks and bonds, rather than on the floor of an exchange. Together, these two markets form the secondary market. The primary and secondary markets together make up the stock market.

Exchanges are located all over the world, with the most famous one being the New York Stock Exchange. The NYSE annually trades almost $12 trillion dollars worth of capital. Thousands of stocks are listed on this exchange. When you buy a stock, you will need to learn which exchange(s) list it. Other than locating a quote in the newspaper, with online trading and the automation of order systems, there is very little reason to determine where the stock trades from the customer's viewpoint.

The Securities and Exchange Commission (SEC) regulates stock trading and exchanges. Additional regulation is administered by The National Association of Securities Dealers (NASD). The NASD makes and enforces rules for its members and enforces federal securities acts and the SEC makes rules for its membership. As you read more about

investing, you will become more familiar with these organizations and their protective regulations.

All the technicalities aside, read below to learn what you, as an investor, get out of stock ownership besides your piece of the company.

3.3 WHAT BENEFITS DO INVESTORS GET FROM STOCK OWNERSHIP?

In addition to owning part of a company, you have the potential to receive monetary benefits when you own stock shares. Owning stock may allows you the opportunity to earn money on money.

Historically, stocks have performed better than most other investments. This is a testament to the growth of the economy in the United States. From 1955 to 1994, the average yearly return of a share of stock was approximately 10 percent. This means that if $10,000 were invested in stocks in 1955, and dividends and capital gains were reinvested instead of kept, this $10,000 would have been worth about $444,000 by 1994.

3.4 TYPES OF STOCKS

3.4.1 BLUE CHIP STOCKS

The term "blue chip" comes from poker, where the blue chips carry the highest value. Large, established firms with a long record of profit growth, dividend payout and a reputation for quality management, products and services are referred to as Blue Chip companies. These firms are generally leaders in their industries and are considered likely candidates for long-term growth. Because Blue Chip companies are held in such high esteem, they often set the standards by which other companies in their fields are

measured. Well-known blue chips include IBM, Coca-Cola, General Electric and McDonald's.

Blue chip stocks are included in the Dow Jones Industrial Average, an index comprised of 30 companies that are all major players in their respective industries. Popular among individual and institutional investors alike, the 30 stocks listed on the Dow account for about one fifth of the total market value (over $8 trillion) of all U.S. stocks.

Investors who seek investments that pay moderate dividend yields and that also grow are attracted to blue chip stocks. These stocks are usually priced high because of their demand, have relatively low volatility and deliver a steady stream of dividends. The main downside is that, since they are so large, they have little room to appreciate, compared to smaller, up-and-coming stocks.

3.4.2 PENNY STOCKS

Penny stocks are low-priced, speculative stocks that are very risky. They are issued by companies with a short or erratic history of revenues and earnings. They are the lowest of the low in price and many stock exchanges choose not trade them.

Penny stocks (also called designated securities) have these specific qualities: they sell for less than $5, they are sold over the counter (but not on the NASDAQ), and their companies have 2 million dollars or less in net tangible assets. They are listed daily on the Pink Sheets.

The appeal of penny stocks comes from their low price. Though the odds are against it, if the company that issued them suddenly finds itself on a growth track, their share price can rise rapidly. These stocks are popular among small speculators.

3.4.3 INCOME STOCKS

Income stocks are those stocks that pay higher-than-average dividends over a sustained period. These above average dividends tend to be paid by large, established companies with stable earnings. Utilities and telephone company stocks are often classified as income stock.

Income stocks are popular with investors who want steady income for a long time and who do not need much growth in their stock's value (though some growth does occur). In this sense, investors who choose them have something in common with bondholders. Income stocks can actually be more profitable than bonds. To maximize income, some investors will even seek out companies that frequently raise their dividends and are not saddled with debt.

3.4.4 VALUE STOCKS

A value stock is a stock that is currently selling at a low price. Companies that have good earnings and growth potential but whose stock prices do not reflect this are considered value companies. Both the market and investors are largely ignoring their stocks. Investors who buy value stocks believe that these stocks are only temporarily out of favor and will soon experience great growth. Factors such as new management, a new product or operations that are more efficient may make a value stock grow quickly.

Many companies alternate between value and growth...it is a part of the business cycle. Value stocks are attractive to investors who watch markets carefully for undervalued stocks they feel will move upward.

3.4.5 OTHER TYPES OF STOCKS

These are also worth noting.

- **Defensive stocks** are those whose prices stay stable when the market declines and are issued by industries that naturally do well during recessions. Food and utilities companies are defensive stocks. Debt collection companies also tend to perform well when the market turns sour.
- **Cyclical stocks** are stocks that move up or down in sync with the business cycle. Examples include the housing industry and industrial equipment companies, because these companies serve the needs of growing economies. Investors who do not mind buying and selling as the market fluctuates tend to like cyclical stocks. Individuals who prefer to hold a stock for a long time may not like them unless they can weather ups and downs in the stock's value.
- **Gold stocks** are the stocks of gold-mining companies. Their value moves up or down with the price of gold.
- **Treasury stock** is stock that has been bought back by the company that issued it. Companies may buy their stock back from investors when they believe it is under priced on the market. The company can then set aside the stock for future uses such as debt payment or the awarding of stock options.

3.5 FINANCIAL INDICATORS OF COMPANIES

'**Div yield %**' (often referred to as % yield) is a measure of the return to shareholders on their investment. It is calculated by dividing the dividend earned by each share ('**Div ¢ per share**') by the latest share price and multiplying by 100. In the case of Makeshift Construction:

$$\% \text{ yield} = \frac{14.9 \times 100}{420} = 3.547\% = 3.55\%$$

This means that you are earning 3.55% on your investment – probably about the same as you could earn in a high-interest bank account.

The last value in most market tables is the '**PE ratio**' (price earnings ratio). This is the ratio of the share price to its earnings per share (EPS). EPS is calculated by dividing the net operating profit of the company by the number of ordinary shares on issue. This figure isn't given in the table, but we happen to know that its EPS is $0.309. The PE ratio then becomes 4.2 divided by 0.309, which is 13.6 – middle-of-the-road for a stock of this type.

$$PE = \frac{\$4.20}{\$0.309} = 13.6$$

By looking at the way the PE ratio is calculated we can see that it increases as EPS decreases and as share price increases. A high PE ratio indicates that the share price is high relative to its current earning power, possibly indicating that the stock is over-valued and that a 'market adjustment' (that is, a rapid fall in price) might be expected. Alternatively, it might indicate that the company has good prospects for growth – so investors are prepared to put up with low earnings for now in the expectation that these will increase in the future.

This snapshot view of Makeshift Construction does give us some important information about the company. But most indicators of company performance, including the Div yield % and the PE ratio, are best viewed over time, so that trends in performance become evident. For example, while the Div yield % for Makeshift Construction is quite low at the moment, it may be moving upwards.

Even at their best, though, market indicators only tell us about what has already happened, not what will happen in the future.

3.6 STOCK EXCHANGES OF PAKISTAN

1. **Karachi stock exchange**
2. **Islamabad stock exchange**
3. **Lahore stock exchange**

3.6.1 ABOUT KSE

3.6.1.1 HISTORY

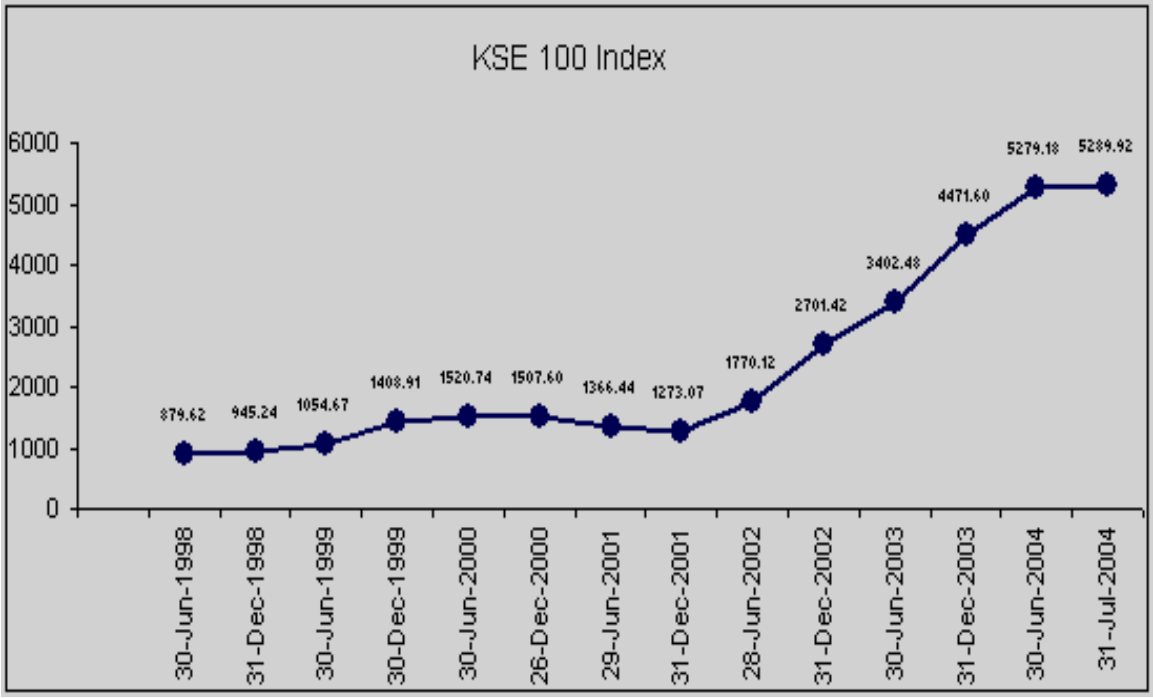
Karachi Stock Exchange is the biggest and most liquid exchange and has been declared as the "Best Performing Stock Market of The World For the year 2002". As on August 03, 2004, 663 companies were listed with the market capitalization of Rs. 1,421.35 billion (US$ 24.17 billion) having listed capital of Rs. 376.98 billion (US$ 6.41 billion). The KSE 100 Index touched at 5262.52 on August 03, 2004.

KSE has been well into the 3rd year of being one of the Best Performing Markets of the world as declared by the international magazine "Business Week". Similarly the US newspaper, USA Today, termed Karachi Stock Exchange as one of the best performing bourses in the world. The market performance during the period June 1998 to July 2004 is given under.

DECADEWISE PROGRESS			
YEAR	NO. OF LISTED COMPANIES	LISTED CAPITAL (Rs. in million)	MARKET CAPITALISATION (Rs. in million)
1950	15	117.3	-
1960	81	1,007.7	1,871.4
1970	291	3,864.6	5,658.1
1980	314	7,630.2	9,767.3
1990	487	28,056.0	61,750.0
2000	762	236,458.5	382,730.4

3.6.1.2 PERFORMANCE

The market performance during the period June 1998 to July 2004 is given under.



3.6.1.3 KSE 100 INDEX

The **KSE 100 Index** is a benchmark used to compare prices over a period of time; companies with the highest market capitalization are selected. However, to ensure full market representation, the company with the highest market capitalization from each sector is also included. The following is a list of 25 companies with the highest weight age in the index and account for over 72.30% of the KSE index:

	Company Name	Weightage (%)	Shares Outstanding (M)
1	Pakistan Telecommunications	19.00	3,774.00
2	Pakistan State Oil	6.50	171.52
3	Hub Power	5.40	1,157.15
4	Pakistan Oilfields	3.60	82.13
5	Fauji Fertilizer	3.10	256.50
6	Pakistan PTA	2.60	1,514.21
7	National Bank	2.60	410.34
8	Sui Northern Gas	2.60	499.19
9	Unilever Pakistan	2.50	13.29
10	Sui Southern Gas	2.20	671.17
11	K.E.S.C.	2.10	2,266.22
12	Muslim Commercial Bank	2.00	306.53
13	FFC Jordan	1.80	809.90
14	Shell Pakistan	1.80	35.07
15	Nestle Milkpak	1.60	45.27
16	Engro Chemicals	1.60	152.94
17	Glaxo Smith	1.50	72.82
18	Pakistan international Airlines	1.50	666.31
19	National Refinery	1.50	66.64
20	Dawood Hercules	1.40	72.06
21	ICI Pakistan	1.40	138.80
22	Faysal Bank	1.40	264.79
23	Ibrahim Fibres	1.20	310.51
24	Packages	1.00	47.54
25	DG Khan Cement	1.00	167.63

3.6.1.4 GROWTH & PROGRESS

Today KSE has emerged as the key institution of the capital formation in Pakistan with:-

i. Listed companies 663, securities listed on the exchange 698: ordinary share 663, Preference shares 9 and debt securities (TFC's) 26.
ii. Listed capital Rs. 376,983.22 million (US$ 6,411.28 million).
iii. Market capitalization Rs.1,421,353.85 million (US$ 24,172.68 million).
iv. Average daily turnover 392.81 million shares with average daily trade value Rs. 18,653.54 million (US$ 317.24 million)
v. Membership strength at 200.
vi. Corporate Members are 105 out of which 9 are public listed companies.
vii. Active Members are 151.
viii. Fully automated trading system with T+3 settlement cycle.
ix. Deliveries through central depository company.

3.6.1.5 MARKET INDICES

KSE began with a 50 shares index. As the market grew a representative index was needed. On November 1, 1991 the KSE-100 was introduced and remains to this date the most generally accepted measure of the Exchange. The KSE-100 is a capital weighted index and consists of 100 companies representing about 88 percent of market capitalization of the Exchange.

In 1995 the need was felt for an all share index to reconfirm the KSE-100 and also to provide the basis of index trading in future. On August 29, 1995 the KSE all share index was constructed and introduced on September 18, 1995.

3.6.1.6 ARBITRATION

KSE has devised procedures for resolution of investor's complaints against members and between inter stock exchanges members. Disputes between investors and members of the Exchange are resolved through the deliberations of the Arbitration Committee of the Exchange.

3.6.2 LAHORE STOCK EXCHANGE (GUARANTEE) LIMITED

I. The name of the Association is Lahore Stock Exchange (Guarantee) Limited (hereinafter referred to as the "Exchange").

II. The registered office of the Exchange shall be situated in the province of Punjab.

III. The objects for which the Exchange is established are to undertake in or outside Pakistan any or all of the following:

1. To conduct, regulate and control the trade or business of buying, selling and dealing in shares, scrips, participation term certificates, Modaraba certificates, pre-organization certificates, and securities, stocks, bonds, debentures, debenture stocks, Government paper, loans and any other instruments and securities of like nature including but not limited to Special National Fund Bonds and documents of a similar nature issued by the Government of Pakistan or any institution or agency authorized by it.

2. To maintain high standards of commercial honor and integrity, to promote and inculcate honorable practices and just and equitable principles of trade and business, to

discourage and to suppress malpractices, to settle and decide points of practice, disputes, questions of usage, custom and courtesy in the conduct of trade and business.

3. To establish and maintain or to arrange with our through a Bank a Clearing House for the business of the Exchange, and to frame regulations under which such Clearing House shall function.

4. To make and adopt regulations regarding the admission, conduct, expulsion and suspension of members and the mode and conditions in, and subject to, which the business of the Exchange shall be conducted and from time to time, as may be necessary, to alter, add to, repeal and substitute such regulations or any of them and to make and implement any new, amended or additional regulations as may be considered necessary or desirable for the purposes aforesaid.

3.6.3 ISLAMABAD STOCK EXCHANGE

Islamabad Stock Exchange owes its origin to the dynamic group of leading businessmen and professionals of Islamabad/Rawalpindi region who conceived the idea of the establishment of the third bourse in the country so as to provide new investment avenues to the people of the northern region of Pakistan. Over the years, the founders' vision for bringing of vital element of competition to the securities market place has enabled the ISE to become known for the highest standard of transparency in its operations and excellent risk management. Today, the ISE has also been recognized for its dynamic market technology, lowest overall costs of listing and an unparallel market discipline.

3.6.3.1 MISSION STATEMENT

"To create value for our investors and listed companies through dynamic market operations, fair and transparent business practices and effective management."

3.6.3.2 CORE VALUES:

We aim to be an organization that is founded on:

- Highest standards of commercial honor and integrity.
- Just and equitable principles of trade and business.

We shall work to:

- Regulate our market in accordance with the international best practices.
- Settle and decide points of dispute arising out of investor's complaints.

We have confidence in our ability to:

- Lead through the strengths of our commitments and willingness to excel.
- Continuously respond to the changing needs of internal and external environments.

3.6.3.3 VISION STATEMENT

"To be the pre-eminent stock market in Pakistan and achieve market recognition both in terms of quality and delivery of our services."

3.6.3.4 ABOUT ISE

The Islamabad Stock Exchange (ISE) was incorporated as a guarantee limited Company on 25th October, 1989 in Islamabad Capital territory of Pakistan with the main object of setting up of a trading and settlement infrastructure, information system,

skilled resources, accessibility and a fair and orderly market place that ranks with the best in the world. The purpose for establishment of the stock exchange in Islamabad was to cater to the needs of less developed areas of the northern part of Pakistan.

The ISE has set the highest standards of operational efficiency and is committed to support a climate of confidence and optimism that encourages and promotes trading activity. It also provides for conducive environment to channelize the small investments of the residents of less developed areas. The ISE offers an easy access to both domestic as well as foreign investors and actively encourages the listing of eligible and profitable companies, both large and small to make it an exciting and diverse Exchange. The Exchange is playing a pivotal role for economic growth of the area thereby contributing towards the overall economic prosperity and welfare of the country.

At present there are 104 members out of which 39 are corporate bodies including commercial and investment banks, DFIs and brokerage houses. The other 65 Members are individual persons who are well educated, enterprising and progressive minded. The affairs of the Exchange are governed by the Board of Directors. The Board of Directors consists of ten directors, of which five are elected member directors and four are non-member directors nominated by the SECP while the managing director by virtue of his office is the tenth director of the Board. In order to protect the interest of the investing public, an Investors Protection fund has been established by the Exchange. Since the inception of automated trading system (ISECTS), the trade volume has been multiplying day by day and the average daily turnover has now crossed the figure of 10 million shares. The automated system which was indigenously developed, replaced the outcry system in 1997. Now all the listed securities are traded through the ISECTS. The system of physical handling of shares and securities has been phased out and majority of the scrips are settled through Central Depository Company of Pakistan Limited. At the moment there are 264 companies/securities listed on the Exchange with an aggregate capital of Rs. 225409.110 million. The market capitalization stood at Rs. 476747.478 million as on 07-08-2003 . The pace of listing has remained slow as the economy of the Country is under consistent pressure due to internal as well as external factors.

In comparison with major financial markets around the World, the functioning of capital market in Pakistan is still very much in its infancy and lacks advanced technology. In this context efforts are being made to bring ISE in line with the International system and methodology.

3.7 INDEX NUMBERS

A market index is a method of measuring or tracking the price movements of a particular group of financial securities. In addition to stock market indices, there are bond market indices and commodity market indices. A particular market index may be broad in scope (measuring a large group of stocks in different industries) or quite narrow (measuring selected stocks in a particular sector such as utilities). In this regard, there are market indices for dozens of industry sectors.

3.7.1 IMPORTANCE OF MARKET INDICES

Market indices are important to day traders and other types of investors for two main reasons:

3.7.1.1 INDICES AS BENCHMARKS

Indices are frequently used as performance benchmarks or, in other words, as a point of reference by which the relative performance of a particular investment can be determined.

3.7.1.2 DETERMINING TRADING TRENDS

A stock market index acts as a proxy for the aggregate price changes of all of the stocks which make up that index and, as a result, measures the price direction or volatility of the particular market. Stock market indices are updated frequently throughout each trading day so that trends in market price movements can be quickly seen, thereby enabling trading decisions (i.e. buy, sell or hold at any particular time) to be made expeditiously.

3.7.2 METHODS OF INDEX CALCULATION

Very broadly speaking, there are two main ways stock market indices are calculated, namely:

3.7.2.1 MARKET CAPITALIZATION UNWEIGHTED

Only the aggregate stock pries are used to calculate the index, without weight being given to a particular stock's relative market value or capitalization.

3.7.2.2 MARKET CAPITALIZATION WEIGHTED

The relative market capitalization of each stock in the index is taken into account in calculating the index. Hence, each stock’s weight in the index is proportionate to that stock’s total market value.

Most stock market indices are calculated using a Market Capitalization Weighted method.

3.7.3. MAJOR STOCK MARKET INDICES

The following provides a brief explanation of 5 of the leading U.S. stock market indices.

3.7.3.1 DOW JONES INDUSTRIAL AVERAGE

The Dow Jones Industrial Average (DIJA) is an index of long-standing comprised of 30 blue-chip stocks of very large U.S. companies with wide investor holdings. The index includes companies in a variety of industry sectors but does not include any transportation or utility companies, which are included in separate indices. The DIJA is a Market Capitalization Unweighted index. The 30 stocks making up this index represent about 20% of the total value of stocks listed on the New York Stock Exchange.

3.7.3.2 S&P 500 INDEX

The S&P 500 Composite Stock Price Index is a Market Capitalization Weighted index of 500 stocks of leading U.S. companies in various industry sectors within the U.S. This very popular index is used by the vast majority of mutual fund managers to assist them in making investment decisions.

3.7.3.3 NYSE COMPOSITE INDEX

The NYSE Composite Index measures the price changes of all stocks listed on the New York Stock Exchange. The Index is Market Capitalization Weighted.

3.7.3.4 RUSSELL 2000 INDEX

The Russell 2000 Index is a Market Capitalization Weighted index designed to measure the performance of a basket of stocks consisting of about 2,000 small-cap publicly traded U.S. companies.

3.7.3.5 NASDAQ-100 INDEX

The Nasdaq-100 Index tracks the aggregate performance of 100 of the largest and most actively traded non-financial stocks listed on the Nasdaq. The industry groups represented in this index include firms in the computer hardware and software sectors, telecommunications, retail industry and the biotechnology sector. The Nasdaq-100 Index is calculated using a modified Market Capitalization Weighted method.

(a) When deciding to buy, sell or hold based on the intraday movement of a particular index, make sure to use the appropriate market index for your particular stock.
(b) Market indices are useful tools for the trader but should never be used in isolation from other market factors.

3.7.4 GAUGING MARKET STRENGTH

3.7.4.1 THE IMPORTANCE OF GAUGING MARKET STRENGTH

As a general rule, a good day trader should not attempt to fight the overall trend of the market or the "tape". This is because there is often a strong correlation between the movement of individual stocks and the overall direction of the market. In a strong market, traders can be more aggressive and there are likely to be more trading opportunities available. Weak markets may dictate that trading be limited to short selling or that a more cautious approach be taken in selecting stocks to buy for intraday gains.

There are many so-called "market performance indicators" that can be used by day traders in assessing or gauging the overall direction or strength of the market - thereby helping traders in deciding which stocks to trade, how aggressively to trade them and when it is time to enter or exit a position. This feature describes some of the most commonly used short-term market performance indicators. First, however, a few important general observations are in order, namely:

- Market performance indicators are useful tools but should never be used in isolation from your own trading judgment or without regard to other market events and data.
- Market performance indicators measure collective market behavior at a particular point in time only and are subject to quick reversals in trend.
- It is up to each individual trader to choose the particular indicators to use, decide what weight to accord to each indicator and determine how best to apply them to the trader's investment objectives.

3.7.4.2 COMMONLY USED MARKET PERFORMANCE INDICATORS

The following describes some of the most widely used short-term market performance indicators. These indicators are regularly reported or shown on CNBC and other cable financial news television broadcasts as well as on various market data-feeds and Internet financial portals.

3.7.4.2.1 STANDARD & POORS 500 FUTURES

The movement in the direction of the Standard & Poors 500 futures (S&P futures) is the most frequently used and perhaps the best indicator of overall short-term market direction. The value of S&P futures are tied primarily to the value of the S&P 500 stock cash index which, in turn, is calculated using the stock prices of 500 of the largest listed companies.

This indicator is easy to use to determine market strength. Simply put, if the S&P futures are rising, this signals upward pressure on the market and the market will likely rise. Conversely, if the S&P futures are falling, this is a bearish sign and the market will likely move lower.

Movement in the S&P futures is a good indicator of general market direction primarily because the value of such futures is dictated by and reflects the collective sentiment and behaviors of traders around the world. S&P futures trade 24 hours a day on various global exchanges and you can therefore gauge their level and trend before the opening bell to get a sense of where the market is likely to go.

3.7.4.2.2 ADVANCE/DECLINE RATIO

The Advance/Decline Ratio is an indicator which assists in measuring current market breadth and momentum. This indicator tells you how many stocks are up in price for every share that is down at a particular point in the trading day. If more stocks are up than down and this ratio keeps increasing this is a sign of a broad-based market rally. The converse is a signal that the market is weakening overall.

3.7.4.2.3 TICK

TICK is a very short-term trading indicator which shows the net total of all stocks currently trading on an up tick minus the number of all stocks currently trading at a downtick. A TICK value of -500 means that 500 more stocks on the relevant exchange have declined in price from their last trade and generally implies that the market is currently attracting more sellers than buyers. TICK values of greater than +500 are generally regarded as strongly bullish whereas TICK values of -500 or less are generally regarded as strongly bearish.

3.7.4.2.4 ARMS INDEX

The ARMS Index is a short-term market performance indicator similar in concept to TICKS but, instead of simply looking at the number of uptick and downtick stocks, the ARMS Index weighs each stock by a volume scaling factor. Therefore, while a thinly traded stock that may only trade 2,000 shares in a day has the same weight as any other stock when calculating the TICKS indicator, it will have less weight in the calculation of the ARMS Index. In particular, the ARMS Index is calculated as follows:

$$\text{ARMS Index} = \frac{\text{Advancing Stocks/Up Volume}}{\text{Declining Stocks/Down Volume}}$$

Generally speaking, an ARMS Index value greater than 1.00 is considered bearish whereas a value less than 1.00 is considered bullish. In addition to its absolute value at a point in time, the direction of movement in the ARMS index is also important. A decreasing ARMS suggests the market is rallying whereas an increasing ARMS suggests that the market is weakening.

3.7.4.2.5 THE RELATIVE STRENGTH INDEX (RSI)

The Relative Strength Index (RSI) is one of the most widely used technical indicators by day traders and other short-term investors. This indicator was first introduced by Welles Wilder in an article in "Futures Magazine" in 1978. The RSI is a so-called *oscillator* because it is an index whose value tends to swing or bounce around between an upper limit value and a lower limit value.

The name "Relative Strength Index" is somewhat misleading.

In particular, the RSI does not attempt to compare the relative strength of two different securities, but rather the strength of a single security relative to its past performance. The RSI is used primarily to help identify *overbought* or *oversold* conditions in a particular stock. It does this by confirming changes in momentum which, in turn, may signal an imminent change in price direction or trend for a particular stock.

The index is computed by determining the number of days in a given time interval that a stock is up in price compared with the number of times it is down in price. (A 14 day period is commonly used, but the trader may select any number of days he wishes). The RSI gives the relative strength of a security expressed in terms of a ratio. The formula for computing this ratio uses an exponential moving average that accords the most weight to the most recent price data, while not eliminating the oldest data. Mathematically, the ratio is as follows:

RSI = (ups/x)/(downs/x) = ups/downs

where:
x = number of days in the period.

An RSI value will range from 0 to 100. As a general rule, a stock is considered *overbought* when the RSI is materially above the 70 level (bearish) and *oversold* if it drops materially below the 30 level (bullish).

As an example, the top right chart is a combined price and RSI chart for Dell Computer. The top part graphs the price movement of the stock. The RSI is the colored line on the bottom. Its scale goes from 0 to 100. Various buy and sell signals are generated, as indicated in the RSI chart at top right, when the value of the index goes materially above a level of 70 or below 30.

Another way to interpret the RSI is to view it as a bullish or bearish indicator when it crosses the 50 level. In particular, when the RSI crosses above 50 it can be viewed as a bullish signal. Conversely, when the RSI falls below 50 it can be considered bearish. If the RSI is stable and the stock price is also stable, the stock price is likely to remain stable in the near-term.

Note that recent large dramatic increases or drops in the price of a stock will affect its RSI significantly and possibly generate false buy or sell signals. Further, the shorter number of days used in computing the RSI, the more volatile and extreme it may become. Generally, a period of no less than a 14 day rolling average should be used in computing the index.

In summary, the RSI is a useful indicator to use before making a trading decision - particularly for momentum traders. It should not, however be used on its own, in isolation from other technical indicators and stock picking tools

The formula used for determining the Index values is as follows:

$$\text{Index Level} = \frac{\text{Current Market Value}}{\text{Adjusted Base Period Market Value}} \times \text{Base Value}$$

$$\text{Adjusted Base Period Market Value} = \frac{\text{Current Market Value After Adjustments}}{\text{Current Market Value Before Adjustments}} \times \text{Previous Base Period Market Value}$$

The level of an Index will only change as a result of price changes occurring between the opening and closing of the market. Adjustments for securities being added to or deleted from The Nasdaq Stock Market, Inc., or capitalization changes, are adjustments which take place during the system maintenance process which occurs after the market has closed. These adjustments will result in value changes to the current market value and adjusted base period market value, but will not in and of themselves alter the level of an Index.

Stock splits and stock dividends are likewise adjusted for during the system maintenance process. However, the system makes a price adjustment to account for the increased number of shares with the result being that the current market value does not change. As an example, assume that ABC Corp. has 1,000,000 shares outstanding with a last sale price of 20 (market value - $20,000,000) The company has declared a 2 for 1 stock split. During system maintenance on the day prior to the effective date of the split, the system will adjust the shares outstanding to 2,000,000 and will correspondingly adjust the price to 10. Result, the same current market value of $20,000,000.

In the case of cash dividends, no system adjustment is made. Neither the Current Market Value nor the Adjusted Base Period Market Value is adjusted to reflect cash dividends. The index formula relies on market forces to determine the level of the Index.

3.8 TECHNICAL ANALYSIS

Technical analysis can be defined as use of specific market-generated data for the analyses of both aggregate stock prices (market indices or industry averages) and individual stocks. The technical approach to investing is essentially a reflection of the idea that prices move in trends which are determined by the changing attitudes of investors towards a variety of economic, monetary, political and physiological forces. The art of technical analysis, for it is an art (emphasis added), is to identify trend changes

at an early stage and to maintain and investment posture until the weight of the evidence indicates that the trend is reversed.

Technical analysis is sometimes called market or internal analysis, because it utilizes the record of the market itself to attempt to assess the demand for and supply of shares of a stock or the entire market. Thus, technical analysis believes that the market itself is its own best source of data, as they say , "let the market tell its own story."

Economics teaches us that prices are determined by the interaction of demand and supply. Technicians do not disagree but argues that it is extremely difficult to assess all the factors that influence demand and supply. Since not all investors are in agreement on price, the determining factor at any point in time is the net demand (or lack thereof) for a stock based on how many investors are optimistic or pessimistic. Furthermore, once the balance of investors becomes optimistic (pessimistic), this mode is likely to continue for the near term and can be detected by various technical indicators.

Technical analysis is based on published market data as opposite to fundamental data, such as earnings, sales, growth rate, all Govt. regulations. Market data includes the price of the stock or the level of a market index, volume (no. of shares traded), and technical indicators, such as the short interest ratio. Many technical analysts believe that only such market data, as opposite to fundamental data are relevant.

In Fundamental analysis the dividend discount model produces and estimates of a stock's intrinsic value, which is then compared to the market price. Fundamentalists believe that their data properly evaluated, indicate the worth or intrinsic value of a stock. Technicians, on the other hand, that it is extremely difficult to estimate intrinsic value and virtually impossible to obtain and analyze good information consistently. In particular, they are dubious about the value to be derived from an analysis of published financial statements. Instead, they focus on market data as an indication of the forces of supply and demand for the stock or the market.

Technicians believe that the process by which prices adjust to new information is one of a gradual adjustment towards a new (equilibrium) price. As the stock adjusts from its old equilibrium level to its new level, the price tends to move in a trend. The central concern is not why the change is taking place, but rather the very fact that it is taking place at all. Technical analysis believes that stock prices show identifiable trends that can be

exploited by the investors. They seek to identify changes in the direction of a stock and take a position in stock to take advantage of the trend.

The following points summarize the technical analysis:

1. Technical analysis is based on published market data and focuses on internal factors by analyzing movement in the aggregate market, industry average, or stock. In contrast, fundamental analysis focuses on economic and political factors, which are external to the market itself.
2. The focus of technical analysis is identifying changes in the direction of stock prices which tend to move in trends as a stock price adjusts to a new equilibrium level. These trends can be analyzed, and changes in trends detected, by studying the action of price movements and trading volume across time. The emphasis is on likely price changes.
3. Technicians attempt to assist overall situation concerning stocks by analyzing breadth indicators, market sentiments, momentum and other indicators.

3.8.1 A FRAMEWORK FOR TECHNICAL ANALYSIS:

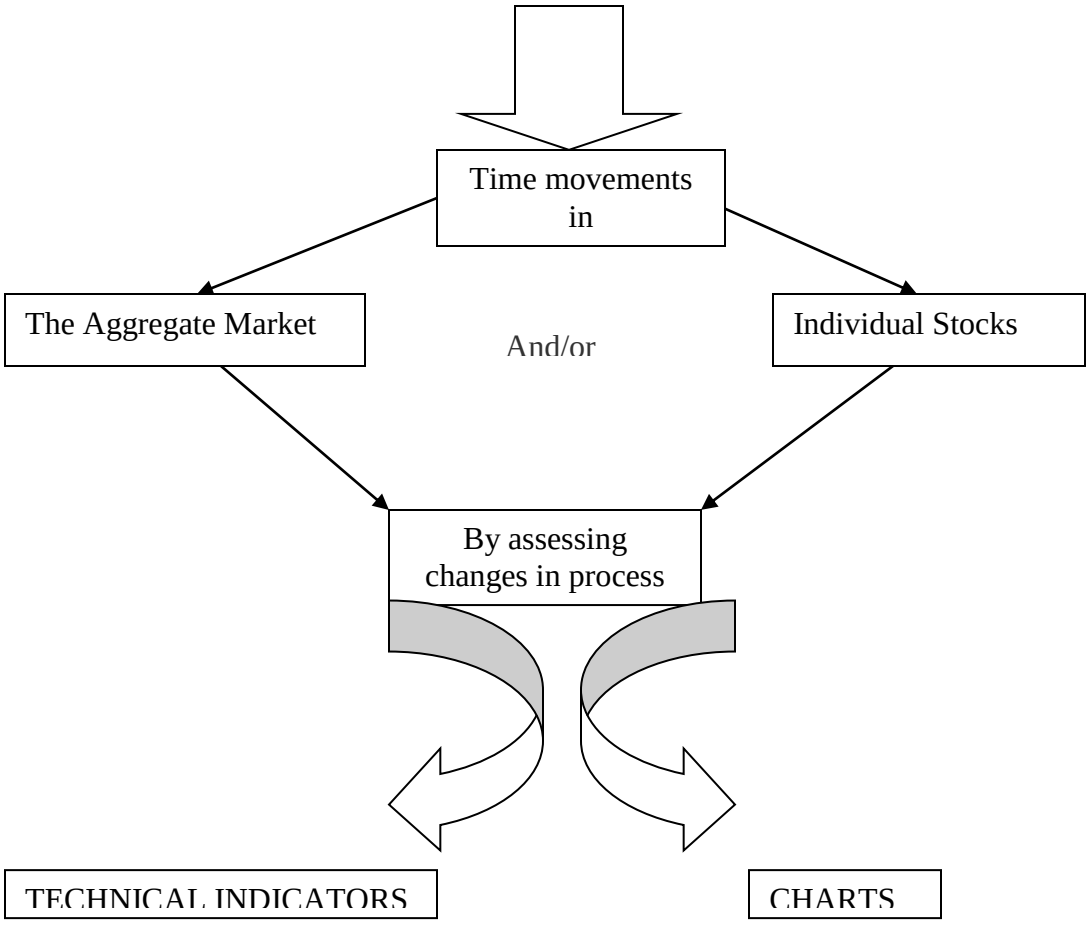
Technical analysis can be applied to both an aggregate of prices (the market as a whole or industry averages) and individual stocks. Technical analysis includes the use of graphs (charts) and technical trading rules and indicators. Figure depicts the technical analysis approach to investing.

Price and volume are the primary tools of the pure technical analyst, and the chart is the most important mechanism for displaying this information. Technicians believe that the forces of supply and demand result in particular patterns of price behavior, the most important of which is the trend or overall direction in price. Using a chart, the technician hopes to identify trends and patterns in stock prices that provide trading signals.

Volume data are used to gauge the general condition in the market and to help assess its trend. The evidence seems to suggest that rising (falling) stock prices are usually associated with rising (falling) volume. If stock prices rose but volume activity did not keep pace, technicians would be skeptical about the upward trend. An upward surge on

contracting volume would be particularly suspected. A downside movement from some pattern or holding point, accompanied by heavy volume, would be taken as bearish sign. We first consider stock price and volume techniques.

3.8.1.1 THE TECHNICAL ANALYSIS APPROACH TO COMMON STOCK SELECTION



Technical analysis is a very powerful tool and is a pre-requisite for anyone who wants to predict financial market movements. The term "technical analysis" is a complicated sounding name for a very basic approach to investing. Simply put, **technical analysis is**

the study of prices and volume, with **stock charts** being the primary tool. So while it seems as if volume and technical analysis in general all have some **forecasting abilities**, none are foolproof. Used together, they can be quite helpful in your trading and investing, but should be looked at more as helpful hints as to a markets bias, more than anything else. A **technical analysis doesn't look at income statements,** balance sheets, company policies, or anything fundamental about the company. The technical analysis looks at the actual history of trading and price in a security or index. This is usually done in the form of a chart. The security can be a stock, future, index, or a sector. It is flexible enough to work on anything that is traded in the financial markets.

3.8.2 TECHNICAL INDICATORS:

The chart remains the technicians' most important tool for making buy and sell decisions. However, in addition to looking at the plot of stock prices, technicians also like to examine the overall situation by analyzing such factors as breadth and market sentiments indicators.

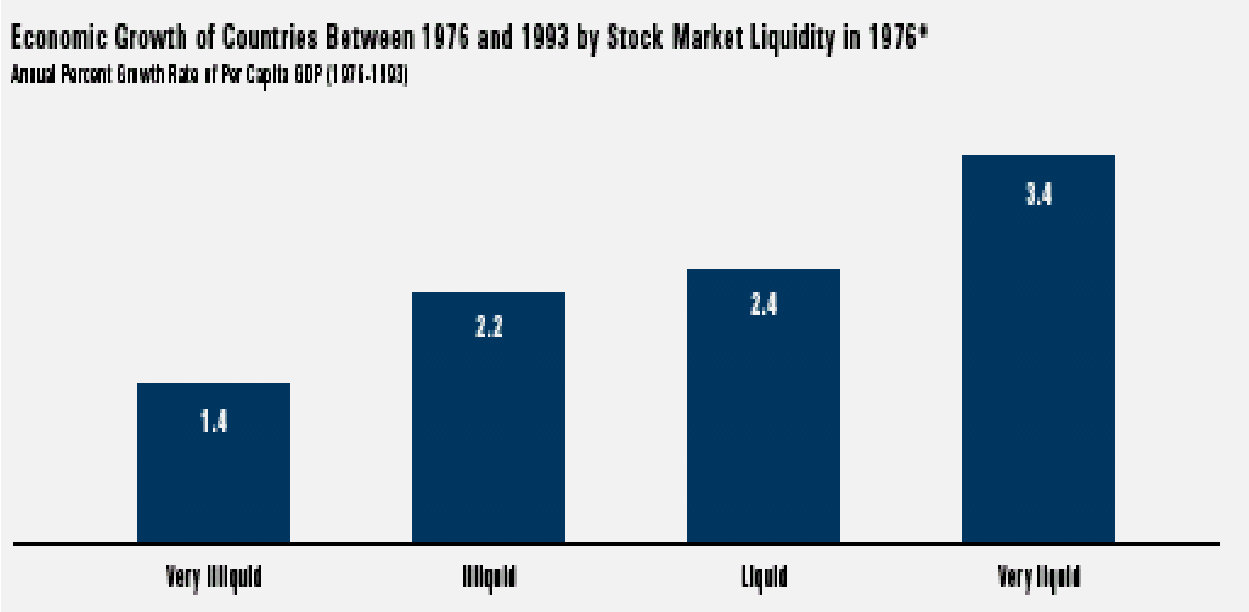
CHAPTER # 4 LOCAL STOCK MARKET AND INDEX NUMBER

4.1 BACKGROUND

Over the past two decades, stock market liquidity has been a catalyst for long-run growth in developing countries. Without a liquid stock market, many profitable long-term investments would not be undertaken because savers would be reluctant to tie up their investments for long periods of time. In contrast, a liquid equity market allows savers to sell their shares easily, thereby permitting firms to raise equity capital on favorable terms. By facilitating longer-term, more profitable investments, a liquid market improves the allocation of capital and enhances prospects for long-term economic growth. In promoting economic growth, a liquid stock market complements a strong banking system, suggesting that banks and stock markets provide different bundles of financial services to the economy. Lastly lowering of international investment barriers significantly enhances the liquidity of stock markets, with positive effects on economic growth. Although stock market volatility tends to rise for a few years after financial liberalization, greater openness to international capital has been associated with lower stock return volatility in the long run. Moreover, stock return volatility does not appear detrimental to long-run growth. Thus, if policymakers have the patience to weather some short-run volatility, liberalizing restrictions on international portfolio flows offers expanded opportunities for economic development.

4.2 INTRODUCTION

Stock markets in developing countries account for a disproportionately large share of the boom in global stock market activity. While the total value of outstanding publicly traded stocks worldwide surged from about $6 trillion in 1986 to more than $20 trillion in 1996, the proportion of worldwide stock market capitalization represented by emerging markets jumped more than threefold. Furthermore, the total value of stock transactions in emerging economies soared from about 2 percent of the world total in 1986 to 12 percent in 1996.2 the rapid emergence of markets in developing countries was accompanied by an explosion in international capital flows, especially to those markets. Net private capital flows to developing nations jumped tenfold over the past decade and exceeded $250 billion in 1996.3 whereas equity flows represented a negligible part of capital flows to emerging markets a decade ago, equity flows now represent about 20 percent of private capital flows to developing nations. These trends raise two critical questions for policymakers in developing countries. First, do developing countries themselves benefit from the rapid development of their stock exchanges? Second, does liberalizing international portfolio flows enhance stock market development and promote long-run economic growth?



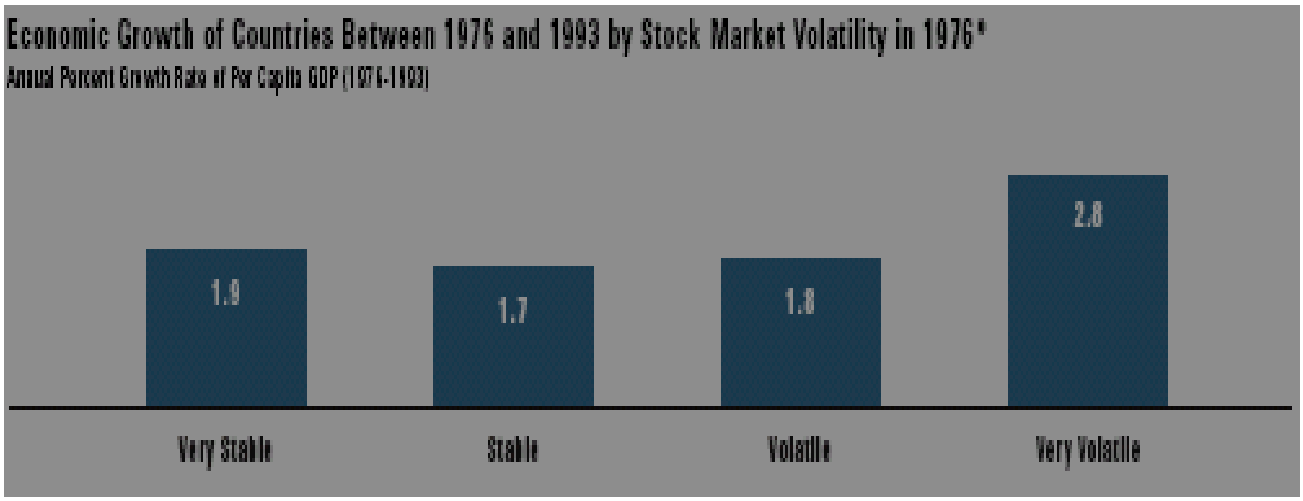
4.3 STOCK MARKET LIQUIDITY ENHANCES ECONOMIC DEVELOPMENT

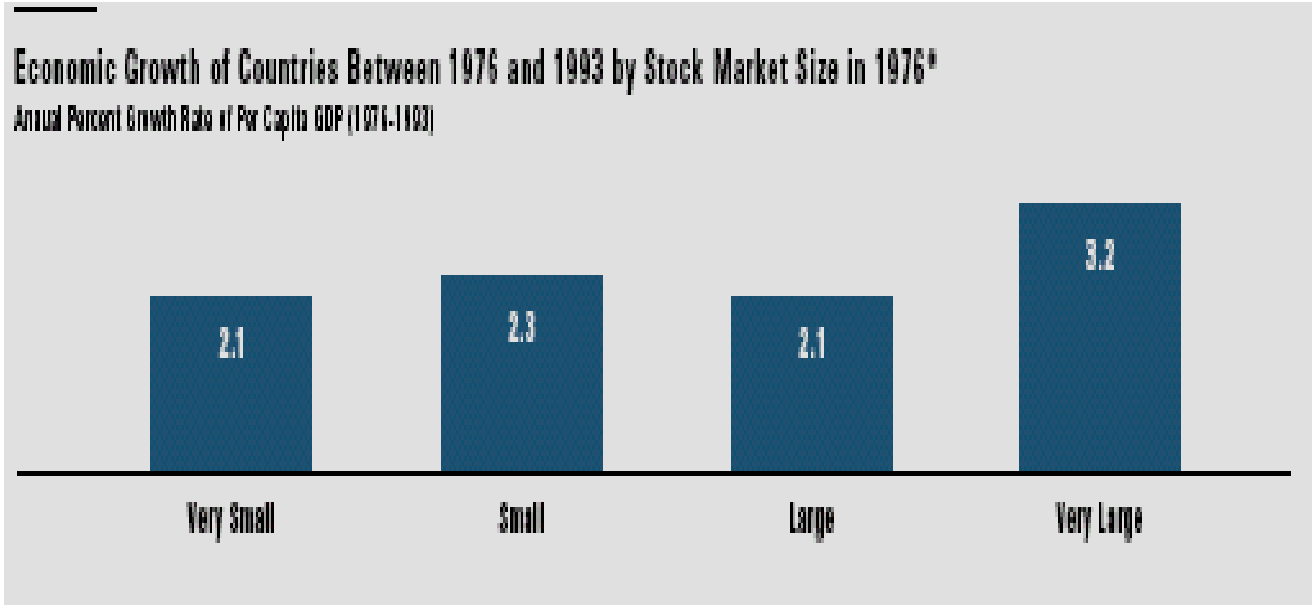
Stock markets contribute to economic development by enhancing the liquidity of capital investments. Many profitable investments require a long-term commitment of capital, but investors might not want to tie up their savings for such long periods. A liquid equity market allows savers to sell their shares easily if they so desire, thereby making shares relatively more attractive investments. As savers become comfortable with investing for the long term in equities, they are likely to rebalance their portfolios toward equities and away from shorter-term financial investments. For firms, this rebalancing lowers the cost of shifting to more profitable—that is, more productive—longer-term projects. Higher-productivity capital, in turn, boosts economic growth. It also increases returns on investments in equity which may prompt individuals to save more, adding further to investment in physical capital and thus fueling economic growth. However, some economists argue that very liquid markets hurt economic development. By allowing investors to sell stocks quickly, liquid markets may reduce investor commitment and reduce incentives of stock owners to exert corporate control by monitoring the performance of managers and firms. In other words, dissatisfied owners sell their shares instead of working to make the firm operate better. According to this view, greater stock market liquidity may impede economic growth by hindering corporate governance.

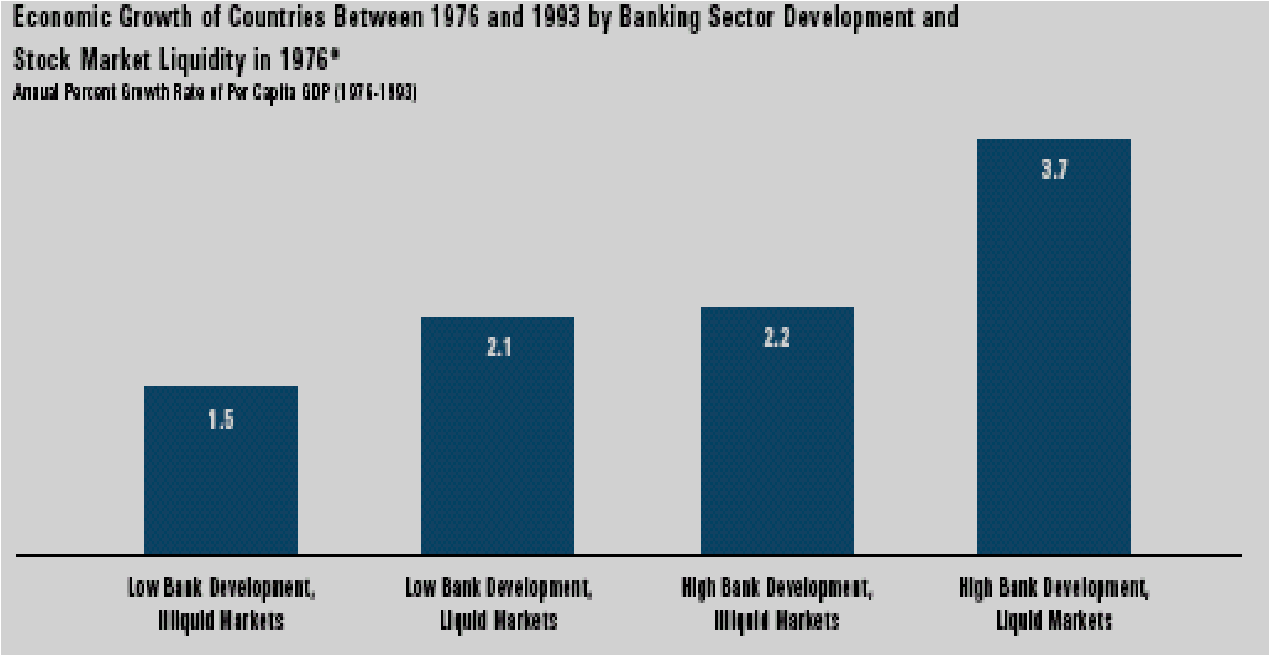
But recent evidence suggests that well-functioning equity markets accelerate economic growth. This evidence is based upon the relationship between indicators of stock market liquidity and economic growth.7 Consider, for example, the total value of the trading volume of a country's stock exchanges expressed as a share of the country's gross domestic product (GDP). This value-traded ratio does not directly measure the costs of buying and selling securities at posted prices. Yet, averaged over a long time, the value-traded ratio is likely to vary with market liquidity, that is, with the ease of trading. If it is costly and risky to trade, there will tend to be less trading.

Using this value-traded ratio for 38 countries,8 Figure 1 groups the countries by the liquidity of their stock markets. The first group has the nine most illiquid markets; the second group has the next 10 most illiquid markets; the third group has the next 10; and the final group has the nine countries with the largest value-traded ratios. Those countries with relatively liquid stock markets in 1976 experienced GDP growth that was much

faster over the subsequent 18 years than countries with illiquid markets. Moreover, countries with the most liquid stock markets in 1976 both accumulated more capital and enjoyed faster productivity growth over the next 18 years. Liquidity thus boosts both the quantity and productivity of capital investment, both of which accelerate economic growth.







Alternative measures of stock market liquidity tell the same story. For instance, the turnover ratio, which equals the total value of shares traded as a share of market capitalization, is also a good forecaster of economic growth. Liquidity also can be measured as the value-traded ratio divided by stock price volatility. More liquid markets should be able to handle high volumes of trading without large price swings. This measure of liquidity also shows that countries with more liquid stock markets tend to grow faster. Other measures of stock market development appear not to account for economic growth as well as liquidity. There is no evidence that higher stock market volatility adversely affects growth (Figure 2). Nor does there seem to be a strong link between the size of the stock market in a country, as measured by market capitalization divided by GDP, and economic growth. Liquidity—the ability to buy and sell equities easily—exhibits the strongest connection to long-run growth. The link between liquidity and economic growth is not simply the result of liquidity serving as a proxy for other sources of growth. For example, the relationship between liquidity and growth remains strong even after controlling for inflation, fiscal policy, political stability, and education, the efficiency of the legal system, exchange rate policy, and openness to international

trade. Thus, raising stock market liquidity may independently produce sizable growth dividends.

4.4 STOCK MARKETS AND BANKS

Traditionally, development specialists have focused on banks and viewed stock markets as unimportant. They note that much more corporate capital is raised from banks than from equity issues. This traditional view, however, fails to recognize that stock markets and banks may provide different financial services. Stock markets may positively affect economic development even though firms obtain the bulk of their capital elsewhere. Empirically, the effect of stock markets on growth can be distinguished from the effect of banking development. To demonstrate this, the 38 countries discussed above were divided into the four groups shown in Figure 4. The first group had greater-than median stock market liquidity (as measured by the value-traded ratio) in 1976 and greater-than-median banking development, where banking development is defined as bank credit divided by GDP. Group two had liquid stock markets in 1976 but less-than-median banking development. Group three had less-than-median stock market liquidity in 1976 but well-developed banks. Group four had illiquid stock markets in 1976 and less-than-median banking development. Countries with both liquid stock markets and well-developed banks grew faster than countries with both illiquid markets and underdeveloped banks (Figure 4). More interestingly, greater stock market liquidity implies faster growth no matter what the level of banking development. Similarly, greater banking development implies faster growth regardless of the level of stock market liquidity. Thus, it is not stock markets versus banks; it is stock markets and banks. Each of these components of the financial system is an independently strong predictor of growth.

Clearly, stock markets offer something to the economy that banks do not. As suggested above, stock markets may play a prominent role in expanding opportunities for trading risk and boosting liquidity. In contrast, banks may focus more on establishing long-term

relationships with firms, so that they can acquire information about managers and firm prospects. To grow, economies need both liquidity and information about firms.

Thus, if stock markets provide the liquidity and banks the information, then banks and stock markets would each independently be associated with growth. But there is overlap. Like markets, banks help savers diversify risk and provide liquid deposits. Similarly, like banks, stock markets stimulate the acquisition of information about firms. Liquid markets encourage the acquisition of information about firms because investors want to make a profit by identifying undervalued stocks and exploiting this information. While overlap undoubtedly exists, the empirical findings show that stock markets provide a sufficiently distinctive bundle of financial services, such that bank and stock market development each enjoy an independently strong link with long-run economic growth.

Moreover, research indicates that banks and equity markets work together. A well-functioning equity market enables entrepreneurs to make long-term, more productive investments in physical capital because they have access to longer-term sources of funds. More productive capital implies higher returns for investors; thus, lenders as well as equity investors more confidently advance funds to these entrepreneurs. Information that flows from trading of companies' shares also boosts lenders' understanding of and confidence in the prospects of these firms. Greater stock market liquidity in emerging market economies thus is associated with an increase in the amount of funds raised through bond offerings and bank loans. Indeed, most capital accumulation is financed through bond offerings and bank loans.12 As a result, corporate debt-equity ratios actually rise with greater stock market liquidity.13 Accordingly, the data strongly suggest that stock market development in emerging market economies tends to complement rather than replace bank lending.

4.5 CAPITAL MARKET LIBERALIZATION

Should developing countries reduce impediments to international capital flows?14 This might involve easing restrictions on capital inflows or reducing limitations on repatriating dividends or capital. In either case, lowering barriers to cross-border capital flows affects the functioning of emerging stock markets. Fewer impediments for foreign investors will enhance market integration with world capital markets and therefore affect the pricing of domestic securities. Domestic firms, in seeking foreign investment, will often have to upgrade the information disclosed to investors. As more foreign investors enter the market, pressure will be applied to upgrade trading systems and modify legal frameworks to support a greater variety of financial instruments. Yet some policymakers fear that opening up domestic stock markets to foreign investors increases the risk that share prices will become more volatile as cash fluctuates with good or bad economic news.15

Such gyrations would complicate macroeconomics and exchange rate policies, while potentially deterring local companies from making long-term investments.

The evidence suggests, however, that lowering international investment barriers encourages stock market development, with positive effects on economic growth.16 Figure 5 lists 14 countries that liberalized controls on international portfolio flows. In 12 of the 14 countries, stock market liquidity rose significantly following the liberalization of international investment restrictions. For example, in

January of 1988, Chile liberalized restrictions on the repatriation of dividends and enjoyed a subsequent rise in market liquidity.17 None of the 14 countries experienced a statistically significant fall in liquidity following liberalization. Combined with the earlier finding that market liquidity boosts economic growth, these results suggest that liberalizing international capital flow restrictions can accelerate economic growth by enhancing stock market liquidity. It is also true that stock market volatility rose in 7 out of 11 cases for a few years following liberalization (Figure 5). Volatility did not fall significantly in any of the cases. Thus, while raising stock market liquidity, capital control liberalization tends to be associated with increased volatility. In the long run, however, greater openness to international capital is associated with lower stock return volatility.18 so, the jump in volatility following liberalization is a transitory phenomenon.

In addition, volatility is not associated with long-run growth, while greater liquidity is strongly linked to faster growth. Thus, if policymakers have the patience to weather some short-run volatility, liberalizing restrictions on international portfolio flows offers expanded opportunities for economic development. Every country does not necessarily need its own active stock market. Conceptually, both firms and savers benefit from easy access to liquid stock markets. It is the ability to trade and issue securities easily that facilitates long-term growth, not the geographical location of the market. In other words, there is little reason to believe that California would grow faster if the New York Stock Exchange moved to Los Angeles. This emphasizes the two-sided nature of capital control liberalization: it allows firms and savers to more readily use the most helpful market, wherever it is. Thus, capital control liberalization may improve the ability of firms to raise capital, both by improving the liquidity of domestic exchanges and by providing greater access to foreign exchanges.

In summary, the evidence suggests that policymakers in emerging markets should take steps to provide greater access to their equity markets because it will enhance the likelihood that their citizens will enjoy better living conditions in the future. While it is true that stock market development does not represent a financial elixir for economic growth, liquid stock markets can be an important contributor to growth, and liberalizing restrictions on international portfolio flows is an effective way of improving access to well-functioning equity markets.

4.6 PAKISTAN: BRIEF ECONOMIC BACKGROUND

Until late 80s, Pakistan's economic performance was characterized by an annual GDP growth rate averaging 6% per annum. The high growth rate supported by agriculture and industry, compensated to an extent, structural imbalances such as weak public finances and vulnerable external account. During the 1990s a series of exogenous shocks i.e. bad crops, the impact of East Asian crisis, economic sanctions following the nuclear testis in 1998, and the resultant freeze on foreign currency accounts dried up private capital flows. Resultantly the GDP growth rate fell below 3% and the structural imbalances were

brought to the fore. Since the late 80s and much of 90s Pakistan had a series of incomplete IMF programs primarily abandoned due to a lack of political will to undertake tough structural reforms. The IFIs assistance was channeled to immigrate needs such as balance of payment support instead of human resources capacity building etc. Hence Pakistan accumulated an unsustainable domestic and foreign debt, default on which had become eminent in 1999.

The "Economic Revival Program" announced by General Musharraf on 15 December 1999 was ambitious and built on three premises. First, that the country's economic ills are so deeply rooted that they can be resolved only over the medium-term, and with most sections of society feeling pain. Second, poverty alleviation must be given precedence over other objectives. Third, "preoccupation with high growth rates" must give way to "self-reliance", that is, Pakistan must stop relying on the IFIs to finance an unsustainable debt burden. Tied to this is a commitment to promote transparency and good governance throughout government and across all ministries. The program includes measures to regain investor confidence, debt reduction through accelerated privatization and the targeting of four economic sectors for special development: agriculture and oil and gas for import substitution, small and medium-scale enterprises and IT to enhance exports and create jobs.

Macro-economic Stability Pakistan has managed to turn around a deteriorating macro economic situation a few years ago to a rapidly improving one by the end of fiscal year 2002-2003. The budget deficit has not only fallen but has turned into a surplus before interest expense. Inflation, traditionally in double digits has remained below 5% for the third year in a row. The current account deficit in the balance of payments has turned into a surplus. Exports have begun to grow again after years of stagnation. Foreign exchange reserves have grown significantly, to sustain 11 months import cover compared to a few weeks import cover few years ago. Remittances from abroad have tripled from 2000-2001 levels. The foreign exchange market has strengthened and the rupee has appreciated against the currencies of Pakistan's main trading partners. The debt reduction efforts are ahead of schedule, with significant falls in both external and domestic public debt as a percent of GDP. As a result of macro-economic stability, Pakistan's credit rating has

improved sharply from technical default in 1999-2000 to Stable in 2002-2003. A reduced need for budget borrowing, in a liquid environment has reduced interest rates at their lowest levels in years. Public expenditure on development has begun to rise as percentage of GDP while spending on defence has fallen. Macro-economic stability has enabled encouraging result in the following areas.

Growth Pakistan's lost GDP growth rate is largely recovered with GDP growth of about 5% in 2002-2003, ahead of most regional economies. The growth was broad based and supported by agricultural, industrial and services sector alike. Next year targets are set at 5.3% based on expectations of robust agricultural sector performance on the backdrop of increased water availability. Agriculture contributes over 25% to the GDP, employs 44% of the work force and is the major source of foreign exchange earnings for Pakistan. Better availability of water is also expected to help GDP growth resulting from hydel generation against expensive furnace oil.

Stock exchange, inflation and forex reserves The Karachi Stock Exchange, KSE-100 was up 92%, and market capitalization grew by 85% to $ 12.3 bn (19% of GDP) from last year's $ 6.6bn (11% of GDP). Pakistan's stock market outperformed all other markets during the last 16 months. This performance was acknowledged with Euromoney's invitation to the Finance Minister to be the keynote speaker at a "Breakfast Panel Discussion" in Dubai ahead of IMF/World Bank scheduled conference in September this year. This might trigger a further flow of foreign funds. Market fundamentals suggest that the index has room for further growth, but technical corrections cannot be ruled out in the current year. The bullish sentiment in the stock market is indication that financial sector reforms in general and stock market reforms in particular have started to show results.

CPI based inflation was 3.4% in 2002-03 against 4% targets. Adequate food supplies, lower fiscal deficit, stable interest rate and appreciation in value of the Rupee, kept inflation low. Upward pressure on inflation targets include a further build up of foreign exchange reserves, an overheating real estate market, continuing growth in private sector credit and an upsurge in consumer loans. On balance, inflation is expected to remain stable within the 2003-2004 targets of 4%.

Pakistan's foreign exchange reserves, now sufficient for 11 months import cover, continue to rise as a result of 77% increase in home remittances in 2002-2003, and the SBP's sterilisation policy to check Rupee appreciation (contained at 4% in 2002-2003 compared to 7% increase a year ago).

Investment The flow of foreign direct investment (FDI) during 2002-03 was $ 798 mn, up 65% over last year, largely in financial, energy, transport and chemical sectors. The UK ($ 219.4 mn) was the top direct investor, with 27% market share. The USA is second with 26% market share. Net investment also increased by 73% ($820 mn) over last year but 18% short of targets. The direct and portfolio investment increase is due to improvement in macroeconomic indicators and ease in border tension with India. Whilst annual investments have doubled in 2002-2003 compared to recent year's average, the level is insignificant to create new jobs. Nevertheless some new agreements signed, for instance, with French Company TOTAL that may see $ 3 bn investment over next few years, and the UK based Commonwealth Development Corporation intentions to expand its commitments by taking on equity ownership in Pakistan, are early signals that investors may be willing to take long-term position in this country. For the trend to continue Pakistan must quickly resolve its constitutional differences, improve security situation and develop relations with India.

Business Outlook Pakistan is a large country with a reasonably well-developed infrastructure which holds the potential for a significant amount of business for UK companies, especially during periods of growth. Britain has a long tradition of trading and investing in Pakistan and is seen as a country of natural choice by many Pakistani businessmen. It is an import-based economy with inelastic demand in some areas. Exports are mainly agriculture based at the moment but the country is diversifying into IT (particularly software) and other non-traditional areas. Financial Services is another sector in which Britain plays a major role and which is moving through the process of liberalization and reform using donor money. Infrastructural developments (ports, airports, communications/IT, power, oil and gas etc) are priorities of the country. Privatization is an area in which British companies could play a strong role given the UK's wide experience.

Updated: 22 August 2003. While every effort has been made to ensure the accuracy of information provided in the brief, the British High Commission does not accept responsibility for any error or omission. This Economic Brief is not an invitation to invest or suggestion to divest. Professional advice should be sought to make investment decisions. Opinions mentioned are that of the Economic Team at the BHC Islamabad and BDHC Karachi and not necessarily that of Her Majesty's Government.

While every effort has been made to ensure the accuracy of information provided in this economic brief, the British High Commission does not accept responsibility for any error or omission. This Economic Brief is not an invitation to invest or suggestion to divest. Professional advice should be sought to make investment decisions. Opinions mentioned are that of the Economic Team at the BHC Islamabad and BDHC Karachi and not necessarily that of Her Majesty's Government.

4.7 CURRENT ECONOMIC SITUATION

(July -- March 2003 2003-- 04)

The process of strengthening Pakistan's economic fundamentals that began four years ago has further accelerated in the current fiscal year (2003-04). There are indications that, like last year (2002-03), most of the targets of the key economic indicators will be surpassed by significant margins. The current fiscal year is witnessing unprecedented increase in credit to private sector; accelerating growth in non-food non-oil imports; extra-ordinary growth in industrial production; robust growth in agriculture; higher than targeted increase in tax collection and exports; continuation of low inflation and low interest rate, a buoyant stock market, and above all, an up-beat mood about the economy. It is generally perceived within and outside the country that Pakistan's economy is now back on the path of higher economic growth it experienced in the 1980s along with macroeconomic stability. This note summarizes the latest development in the various sectors of the economy.

4.7.1 AGRICULTURE

- The agriculture sector was targeted to grow by 4.3 percent in 2003-04.The water availability has increased by 29% during the current fiscal year
- The fertilizer off-take during Rabi (Season) has increased by 11.0%.
- The wheat crop is sown on an area of 8.2 million hectares against the target of 8.1 million hectares during the current season. The size of the wheat crop is expected to be in the range of 20.3 to 20.5 million tons against the target of 20.0 million tons.
- The cotton production was targeted at 10.5 million bales, however, taking into account arrival at ginneries the production is estimated at 10.3 million bales.
- The sugarcane area and production targets for 2003-04 were set at 1.0 million hectares and 48 million tons, respectively. However, sugarcane crop is sown on 1.1 million hectares and production is estimated at 53.8 million tons— 3.5 percent higher than last year.
- The rice area and production targets were set at 2.23 million hectares and 4.3 million tons, respectively. However, recent information suggests that rice is sown on 2.45 million hectares and the production estimates are at 4.87 million tons— 8.9 percent higher than last year.
- The information regarding minor crops is also encouraging and offers grounds for optimism that the growth target for agriculture will be achieved. Industry.
- The large-scale manufacturing (LSM) was targeted to grow by 8.8 percent in 2003-04. During the first eight months (July-February) of the current fiscal year (2003-04), large-scale manufacturing has registered a broadbased growth of 15.0 percent as against 7.7 percent in the comparable period of last year and much higher than targeted growth for the year.
- Vegetable ghee (6.8%), cooking oil (22.9%), beverages (18.3%), cigarettes (10.3%) and sugar (20.8%) have performed well in **Food,**

4.7.2 BEVERAGES AND TOBACCO GROUP.

Cotton cloth (13.7 percent), Leather products (47.5 percent), Paper Printing and Publishing (8.9%), Cement (14.4%), and basic metal industries (11.9%) have also done well. Most importantly, **automobile** production has increased by 56.7 percent in the first eight months of the current fiscal year.

- Based on eight months information it is safe to suggest that industrial growth will exceed the target by a wide margin. Real GDP Growth
- Based on the information available regarding agriculture and large-scale manufacturing, it is safe to say that the real GDP growth target of 5.3 percent will be surpassed by a fair margin and is expected to be in the range of 5.5-6.0 percent.

4.7.3 TAX COLLECTION

- Original target for tax collection by the CBR was set at Rs 510 billion for the current fiscal year. During July-March 2003-04, the tax collection stood at Rs. 352.4 billion as against Rs.310.3 billion in the comparable period of last year— which is 13.6% higher than last year.
- Target for the first 9 months has been Rs.342 billion and the actual collection has been Rs.352.4 billion — Rs.10.4 billion higher than the target.
- Direct taxes have increased by 9.2 percent while indirect taxes increased by 15.5 percent. Within indirect taxes, sales tax has increased by 11.9 percent and customs collection is up by 39.0 percent.
- It took 5 years to reach from Rs 200 billion to Rs 300 billion but during the last four years we are set to move from Rs 300 billion to cross Rs 500 billion in just 4 years. It is important to note that Rs 100 billion additional tax revenue was collected in 5 years with more than Rs 90 billion of additional tax. But we collected Rs 200 billion additional amount in 4 years with **no additional tax measures in the budgets**.

4.7.4 INFLATION

- Inflation was targeted at 4.0 percent for 2003-04. During the first 9 months (July-March) of the current fiscal year, inflation is estimated at 3.7 percent compared with 3.4 percent in the comparable period of last year.
- The rising trend in inflation rate witnessed during last five months is**,** because of increase in prices of some basic food items like wheat, wheat flour, beef, mutton, vegetable ghee and onion etc.
- Food and non-food inflation have been 4.6 percent and 3.1 percent, respectively during July-March 2003-04 as against 3.3 percent and 3.4 percent of the comparable period of last year respectively.
- Appropriate monetary policy accompanied by prudent fiscal management has been responsible for relatively low inflation in Pakistan.

4.7.5 MONETARY SECTOR

- Overall money supply grew by 12.4% during July 01, 2003 to March 27, 2004 as against 12.1% in the same period last year. Monetary Supply is targeted to increase by 11.1% during the Fiscal Year 2003-04.
- Credit to private sector amounted to Rs.237 billion during the same period which is almost two and half times higher than the corresponding period of last year (Rs.101 billion).
- The sharp increase in the credit to private sector indicates that the confidence of the private sector has been restored and they are investing in the economy in a big way.

4.7.6 STOCK MARKET

- Karachi Stock Exchange (KSE) 100-Index has moved up from 3433 points on July 1, 2003 to 5582.3 points as on April 16, 2004 — showing an increase of 62.6 percent. The market capitalization increased from Rs.754 billion to Rs. 1489.5 billion in the same period which implies an increase of 97.5 percent. In dollar terms, the market capitalization moved from $ 13.0 billion to $ 25.9 billion— thereby, showing an increase of 99.2 percent.
- Karachi Stock Exchange (KSE) has been the sixth best performing stock market in the world during 2003.

4.7.7 EXTERNAL SECTOR

- **Exports** are targeted to increase by 8.4 percent to $12.1 billion in 2003- 04. Exports during July-March 2003-04 registered an increase of 13.3 percent— increasing from $ 7856.0 million to $ 8902.2 million. Exports during the current fiscal year are likely to cross the target this year.
- **Exports** of primary commodities decreased by 1.4 percent. Within primary commodities, exports of rice, fish & fish preparation and fruits, registered a growth of 13.1 percent, 19.8 percent and 21.6 percent respectively.
- Exports of textile manufactures grew by 15.4 percent but other manufactures registered an increased of 1.9 percent, the prominent being the petroleum products engineering goods exports which grew by 19.3 percent, and 39.0 percent respectively.
- Other exports—basically non-traditional exports—grew by 46.2 percent.
- **Imports** during the same period have increased by 16.3 percent— increasing from $ 9029.8 million to $ 10502.1 million.
- **Non-food, non-oil imports** basically representing the imports of machinery, raw materials and capital goods, increased by 30.0 percent during July-March 2003-04. This clearly indicates the rising levels of domestic economic activity.

- **Trade deficit** stood at $ 1599.9 million in July-March 2003-04 as against $ 1173.8 million of comparable period of last year.
- **Current account balance** remained in surplus during July-January 2003- 04. With and without official transfers, the current account surplus amounted to $ 1.855 billion and $ 1.422 billion respectively against the whole year target of $ 0.5 billion (or 0.6% of GDP).
- Interestingly, the oil bill was 17 percent of the total import bill during 1995-99, it increased to 27 percent in 2002-03 and decreased to 20 percent during July-March 2003-04.

4.7.8 WORKERS' REMITTANCES

- Workers' Remittances during July-March 2003-04 amounted to $ 2875.3 million as against $ 3230.1 million in the comparable period of last year. Though it shows a decline of 11.0 percent but if we exclude $ 125 million remittances coming through the Hajj Sponsorship Program, the decline is marginal. Furthermore, when viewed against the target of $3.6 billion or $ 300 million per month, the inflow of remittances is $175 million higher than the target.

4.7.9 FOREIGN EXCHANGE RESERVES

- Foreign Exchange Reserves stood at $ 12565 million as on April 15, 2004. It was $ 10729 million at end-June 2003, showing an increase of 17.1 percent from June 2003

4.7.10 EXCHANGE RATE

- Exchange rate on April 15, 2004 has been Rs 57.5 per US dollar in the inter-bank market while in the open market it was Rs 57.8 per US dollar, showing a premium of Rs 0.3 per $ or 0.5 percent. Exchange rate (Pak.Rupee) has appreciated marginally by 0.3 percent since June 2003. Foreign Investment
- Total Foreign Private Investment was $ 820 million in 2002-03 as against $ 474 million a year before. During July-March 2003-04, it stood at $ 586.8 million as against $ 664.7 million in the comparable period of last year. Direct foreign investment stood at $ 632.3 million during July-March 2003- 04 as against $ 658.2 million in the comparable period of last year. Portfolio investment registered an outflow of $ -45.5 million as against an inflow of only $ 6.5 million. The recent sale of two cell phone licences are yet to be included in the FDI. It is expected that Pakistan will receive $ 1.0 billion FDI in the current fiscal year against $ 798 million last year.

4.8 COMPOSITION AND USE OF INDEX NUMBERS IN THE STOCK EXCHANGES OF PAKISTAN

4.8.1 INTRODUCTION

Movements of stock exchange indices popularly considered as key indicators of the economy of a country. Stock exchange indices are not only barometers of the economy and public opinion of the state of economy, but are also used by many technical analysts to forecast and evaluate market trends and base their opinion on the future direction of the market. It is often more important for all observers of the index to not only take it at face value but to also delve deeper into the constituents of the index and the policy followed by the index managers in its maintenance. As indices of any stock market are

being observed carefully by many stakeholders within the country and abroad, it is extremely important to consider their composition and management.

4.8.2 KARACHI STOCK EXCHNAGE

4.8.2.1COMPUTATION METHOD

4.8.2.1.1 OBJECTIVE & DESCRIPTION

The primary objective of the KSE100 index is to have a benchmark by which the stock price performance can be compared to over a period of time. In particular, the KSE 100 is designed to provide investors with a sense of how the Pakistan equity market is performing. Thus, the KSE100 is similar to other indicators that track various sector of the Pakistan economic activity such as the gross national product, consumer price index, etc.

4.8.2.1.2 COMPOSITION OF THE KSE100 INDEX

The KSE100 contains a representative sample of common stock that trade on the Karachi Stock Exchange. The KSE stocks that comprise the index have a total market value of around Rs. 1,197 Billion compared to total market value of Rs. 1,365 Billion for over 679 stocks listed on the Karachi Stock Exchange. This means that the KSE100 Index represents 88 percent of the total market capitalization of the Karachi Stock Exchange, as of 27th February, 2004.

LIST OF SECTORS			
1.	Open-end Mutual Funds	19.	Oil & Gas Marketing Companies
2.	Close-end Mutual Funds	20.	Oil & Gas Exploration Companies
3.	Modarabas	21.	Engineering
4.	Leasing Companies	22.	Automobile Assembler
5.	Investment Banks/Investment Cos./Securities Cos.	23.	Automobile Parts & Accessories
6.	Commercial Banks	24.	Cable & Electrical Goods
7.	Insurance	25.	Transport
8.	Textile Spinning	26.	Technology & Communication
9.	Textile Weaving	27.	Fertilizer
10.	Textile Composite	28.	Pharmaceuticals
11.	Woollen	29.	Chemical
12.	Synthetic & Rayon	30.	Paper & Board
13.	Jute	31.	Vanaspati & Allied Industries
14.	Sugar & Allied Industries	32.	Leather & Tanneries
15.	Cement	33.	Food & Personal Care Products
16.	Tobacco	34.	Glass & Ceramics
17.	Refinery	35.	Miscellaneous
18.	Power Generation & Distribution		

4.8.2.1.3 STOCK SELECTION RULES

The selection criteria for stock inclusion in the recomposed KSE100 Index are:

Rule # 1: Largest market capitalization in each of the 34 Karachi Stock Exchange sectors excluding open-end Mutual Fund Sector.

Rule # 2: The remaining index places (in this case 66) are taken up by the largest market capitalization companies in descending order.

A number of the 34 top sector companies may also qualify for inclusion on the basis of their market capitalization. In other words, companies may qualify solely under rule 1, solely under rule 2, or under both.

The fact that the sector rule is identified as Rule 1 does not imply that it is more important, only that the nature of the selection process is such that it is the screening that is done first.

4.8.2.1.4 CALCULATION METHODOLOGY

In the simplest form, the KSE100 index is a basket of price and the number of shares outstanding. The value of the basket is regularly compared to a starting point or a base period. In our case, the base period is 1st November, 1991. To make the computation simple, the total market value of the base period has been adjusted to 1000 points. Thus, the total market value of the base period has been assigned a value of 1000 points.

An example of how the KSE100 Index is calculated can be demonstrated by using a three-stock sample. Table 1 illustrates the process. First, a starting point is selected and the initial value of the three-stock index set equal to 1000.

Taking stock A's share price of Rs. 20 and multiplying it by its total common shares outstanding of 50 million in the base period provides a market value of one billion

Rupees. This calculation is repeated for stocks B and C with the resulting market values of three and six billion Rupees, respectively.

The three market values are added up, or aggregated, and set equal to 1000 to form the base period value. All future market values will be compared to base period market value in indexed form.

4.8.2.1.4.1 CALCULATING THE KSE100

Step 1: The Base Period Day 1 TABLE 1

Stock	Share Price (in Pak Rs.)	Number of Shares (in Rs.)	Market Value
A	20.00	50,000,000	1,000,000,000.00
B	30.00	100,000,000	3,000,000,000.00
C	40.00	150,000,000	6,000,000,000.00
Total Market Capitalisation 10,000,000,000.00			

Note: Base Period Value/Base Divisor = Rs. 10,000,000,000.00 = 1000.00 Base Period Value/Base Divisor = Rs. 10,000,000,000.00 = 1000.00 * All figures taken are only hypothetical

Step 2: Index Value as on Day 2 TABLE 2

Stock	Share Price (in Pak Rs.)	Number of Shares (in Rs.)	Market Value
A	22.00	50,000,000	1,100,000,000.00
B	33.00	100,000,000	3,300,000,000.00
C	44.00	150,000,000	6,600,000,000.00
Total Market Capitalisation 11,000,000,000.00			

Index = (11,000,000,000.00/10,000,000,000.00)*1000= 1.10 * 1000 = 1100

Thus, the formula for calculating the KSE100 Index is :

{(Sum of Shares Outstanding * Current Price)/Base Period Value}*1000

OR (Market Capitalization/Base Divisor) * 1000 Base Divisor

The KSE100 Index calculation at any time involves the same multiplication of share price and shares outstanding for each of the KSE100 Index component stocks. The aggregate market value is divided by the base value and multiplied by 1000 to arrive at the current index number.

4.8.2.1.5 RECOMPOSITION OF THE KSE-100 INDEX

Maintenance of the index over time will require an on-going semi-annual recomposition process, internal and external- buffer files of shares that exceed (shares outside the index) or fall below (shares inside the index) the above criteria will be maintained under the jurisdiction of the recomposition committee.

Maintaining adequate representation of the under-lying stock market through all of its future development and changes is dependent upon the establishment of an appropriate recomposition process. Recomposition rules fall into two general categories: Sector rules and market capitalization rules.

CHAPTER # 5 INTERNATIONAL STOCK MARKET AND INDEX NUMBERS

5.1 STOCK MARKET OF USA

Capital markets in the United States provide the lifeblood of capitalism. Companies turn to them to raise funds needed to finance the building of factories, office buildings, airplanes, trains, ships, telephone lines, and other assets; to conduct research and development; and to support a host of other essential corporate activities. Much of the money comes from such major institutions as pension funds, insurance companies, banks, foundations, and colleges and universities. Increasingly, it comes from individuals as well. As noted in chapter 3, more than 40 percent of U.S. families owned common stock in the mid-1990s.

Very few investors would be willing to buy shares in a company unless they knew they could sell them later if they needed the funds for some other purpose. The stock market and other capital markets allow investors to buy and sell stocks continuously. The markets play several other roles in the American economy as well. They are a source of income for investors. When stocks or other financial assets rise in value, investors become wealthier; often they spend some of this additional wealth, bolstering sales and promoting economic growth. Moreover, because investors buy and sell shares daily on the basis of their expectations for how profitable companies will be in the future, stock prices provide instant feedback to corporate executives about how investors judge their performance.

Stock values reflect investor reactions to government policy as well. If the government adopts policies that investors believe will hurt the economy and company profits, the market declines; if investors believe policies will help the economy, the market rises. Critics have sometimes suggested that American investors focus too much on short-term

profits; often, these analysts say, companies or policy-makers are discouraged from taking steps that will prove beneficial in the long run because they may require short-term adjustments that will depress stock prices. Because the market reflects the sum of millions of decisions by millions of investors, there is no good way to test this theory.

In any event, Americans pride themselves on the efficiency of their stock market and other capital markets, which enable vast numbers of sellers and buyers to engage in millions of transactions each day. These markets owe their success in part to computers, but they also depend on tradition and trust -- the trust of one broker for another and the trust of both in the good faith of the customers they represent to deliver securities after a sale or to pay for purchases. Occasionally, this trust is abused. But during the last half century, the federal government has played an increasingly important role in ensuring honest and equitable dealing. As a result, markets have thrived as continuing sources of investment funds that keep the economy growing and as devices for letting many Americans share in the nation's wealth.

To work effectively, markets require the free flow of information. Without it, investors cannot keep abreast of developments or gauge, to the best of their ability, the true value of stocks. Numerous sources of information enable investors to follow the fortunes of the market daily, hourly, or even minute-by-minute. Companies are required by law to issue quarterly earnings reports, more elaborate annual reports, and proxy statements to tell stockholders how they are doing. In addition, investors can read the market pages of daily newspapers to find out the price at which particular stocks were traded during the previous trading session. They can review a variety of indexes that measure the overall pace of market activity; the most notable of these is the Dow Jones Industrial Average (DJIA), which tracks 30 prominent stocks. Investors also can turn to magazines and newsletters devoted to analyzing particular stocks and markets. Certain cable television programs provide a constant flow of news about movements in stock prices. And now, investors can use the Internet to get up-to-the-minute information about individual stocks and even to arrange stock transactions.

5.2 THE STOCK EXCHANGE

There are thousands of stocks, but shares of the largest, best-known, and most actively traded corporations generally are listed on the New York Stock Exchange (NYSE). The exchange dates its origin back to 1792, when a group of stockbrokers gathered under a buttonwood tree on Wall Street in New York City to make some rules to govern stock buying and selling. By the late 1990s, the NYSE listed some 3,600 different stocks. The exchange has 1,366 members, or "seats," which are bought by brokerage houses at hefty prices and are used for buying and selling stocks for the public. Information travels electronically between brokerage offices and the exchange, which requires 200 miles (320 kilometers) of fiber-optic cable and 8,000 phone connections to handle quotes and orders.

How are stocks traded? Suppose a schoolteacher in California wants to take an ocean cruise. To finance the trip, she decides to sell 100 shares of stock she owns in General Motors Corporation. So she calls her broker and directs him to sell the shares at the best price he can get. At the same time, an engineer in Florida decides to use some of his savings to buy 100 GM shares, so he calls his broker and places a "buy" order for 100 shares at the market price. Both brokers wire their orders to the NYSE, where their representatives negotiate the transaction. All this can occur in less than a minute. In the end, the schoolteacher gets her cash and the engineer gets his stock, and both pay their brokers a commission. The transaction, like all others handled on the exchange, is carried out in public, and the results are sent electronically to every brokerage office in the nation.

Stock exchange "specialists" play a crucial role in the process, helping to keep an orderly market by deftly matching buy and sell orders. If necessary, specialists buy or sell stock themselves when there is a paucity of either buyers or sellers.The smaller American Stock Exchange, which lists numerous energy industry-related stocks, operates in much the same way and is located in the same Wall Street area as the New York exchange. Other large U.S. cities host smaller, regional stock exchanges.

The largest number of different stocks and bonds traded are traded on the National Association of Securities Dealers Automated Quotation system, or Nasdaq. This so-called

over-the-counter exchange, which handles trading in about 5,240 stocks, is not located in any one place; rather, it is an electronic communications network of stock and bond dealers. The National Association of Securities Dealers, which oversees the over-the-counter market, has the power to expel companies or dealers that it determines are dishonest or insolvent. Because many of the stocks traded in this market are from smaller and less stable companies, the Nasdaq is considered a riskier market than either of the major stock exchanges. But it offers many opportunities for investors. By the 1990s, many of the fastest growing high-technology stocks were traded on the Nasdaq.

5.3 A NATION OF INVESTORS

An unprecedented boom in the stock market, combined with the ease of investing in stocks, led to a sharp increase in public participation in securities markets during the 1990s. The annual trading volume on the New York Stock Exchange, or "Big Board," soared from 11,400 million shares in 1980 to 169,000 million shares in 1998. Between 1989 and 1995, the portion of all U.S. households owning stocks, directly or through intermediaries like pension funds, rose from 31 percent to 41 percent.

Public participation in the market has been greatly facilitated by mutual funds, which collect money from individuals and invest it on their behalf in varied portfolios of stocks. Mutual funds enable small investors, who may not feel qualified or have the time to choose among thousands of individual stocks, to have their money invested by professionals. And because mutual funds hold diversified groups of stocks, they shelter investors somewhat from the sharp swings that can occur in the value of individual shares.

There are dozens of kinds of mutual funds, each designed to meet the needs and preferences of different kinds of investors. Some funds seek to realize current income, while others aim for long-term capital appreciation. Some invest conservatively, while others take bigger chances in hopes of realizing greater gains. Some deal only with stocks of specific industries or stocks of foreign companies, and others pursue varying market

strategies. Overall, the number of funds jumped from 524 in 1980 to 7,300 by late 1998.

Attracted by healthy returns and the wide array of choices, Americans invested substantial sums in mutual funds during the 1980s and 1990s. At the end of the 1990s, they held $5.4 trillion in mutual funds, and the portion of U.S. households holding mutual fund shares had increased to 37 percent in 1997 from 6 percent in 1979.

5.4 HOW STOCK PRICES ARE DETERMINED

Stock prices are set by a combination of factors that no analyst can consistently understand or predict. In general, economists say, they reflect the long-term earnings potential of companies. Investors are attracted to stocks of companies they expect will earn substantial profits in the future; because many people wish to buy stocks of such companies, prices of these stocks tend to rise. On the other hand, investors are reluctant to purchase stocks of companies that face bleak earnings prospects; because fewer people wish to buy and more wish to sell these stocks, prices fall.

When deciding whether to purchase or sell stocks, investors consider the general business climate and outlook, the financial condition and prospects of the individual companies in which they are considering investing, and whether stock prices relative to earnings already are above or below traditional norms. Interest rate trends also influence stock prices significantly. Rising interest rates tend to depress stock prices -- partly because they can foreshadow a general slowdown in economic activity and corporate profits, and partly because they lure investors out of the stock market and into new issues of interest-bearing investments. Falling rates, conversely, often lead to higher stock prices, both because they suggest easier borrowing and faster growth, and because they make new interest-paying investments less attractive to investors.

A number of other factors complicate matters, however. For one thing, investors generally buy stocks according to their expectations about the unpredictable future, not according to current earnings. Expectations can be influenced by a variety of factors,

many of them not necessarily rational or justified. As a result, the short-term connection between prices and earnings can be tenuous.

Momentum also can distort stock prices. Rising prices typically woo more buyers into the market, and the increased demand, in turn, drives prices higher still. Speculators often add to this upward pressure by purchasing shares in the expectation they will be able to sell them later to other buyers at even higher prices. Analysts describe a continuous rise in stock prices as a "bull" market. When speculative fever can no longer be sustained, prices start to fall. If enough investors become worried about falling prices, they may rush to sell their shares, adding to downward momentum. This is called a "bear" market.

5.5 MARKET STRATEGIES

During most of the 20th century, investors could earn more by investing in stocks than in other types of financial investments -- provided they were willing to hold stocks for the long term.

In the short term, stock prices can be quite volatile, and impatient investors who sell during periods of market decline easily can suffer losses. Peter Lynch, a renowned former manager of one of America's largest stock mutual funds, noted in 1998, for instance, that U.S. stocks had lost value in 20 of the previous 72 years. According to Lynch, investors had to wait 15 years after the stock market crash of 1929 to see their holdings regain their lost value. But people who held their stock 20 years or more never lost money. In an analysis prepared for the U.S. Congress, the federal government's General Accounting Office said that in the worst 20-year period since 1926, stock prices increased 3 percent. In the best two decades, they rose 17 percent. By contrast, 20-year bond returns, a common investment alternative to stocks, ranged between 1 percent and 10 percent. Economists conclude from analyses like these that small investors fare best if they can put their money into a diversified portfolio of stocks and hold them for the long term. But

some investors are willing to take risks in hopes of realizing bigger gains in the short term. And they have devised a number of strategies for doing this.

5.5.1 BUYING ON MARGIN.

Americans buy many things on credit, and stocks are no exception. Investors who qualify can buy "on margin," making a stock purchase by paying 50 percent down and getting a loan from their brokers for the remainder. If the price of stock bought on margin rises, these investors can sell the stock, repay their brokers the borrowed amount plus interest and commissions, and still make a profit. If the price goes down, however, brokers issue "margin calls," forcing the investors to pay additional money into their accounts so that their loans still equal no more than half of the value of the stock. If an owner cannot produce cash, the broker can sell some of the stock -- at the investor's loss -- to cover the debt.

Buying stock on margin is one kind of leveraged trading. It gives speculators -- traders willing to gamble on high-risk situations -- a chance to buy more shares. If their investment decisions are correct, speculators can make a greater profit, but if they are misjudge the market, they can suffer bigger losses.

The Federal Reserve Board (frequently called” the Fed"), the U.S. government's central bank, sets the minimum margin requirements specifying how much cash investors must put down when they buy stock. The Fed can vary margins. If it wishes to stimulate the market, it can set low margins. If it sees a need to curb speculative enthusiasm, it sets high margins. In some years, the Fed has required a full 100 percent payment, but for much of the time during the last decades of the 20th century, it left the margin rate at 50 percent.

5.5.2 SELLING SHORT.

Another group of speculators are known as "short sellers." They expect the price of a particular stock to fall, so they sell shares borrowed from their broker, hoping to profit by replacing the stocks later with shares purchased on the open market at a lower price. While this approach offers an opportunity for gains in a bear market, it is one of the riskiest ways to trade stocks. If a short seller guesses wrong, the price of stock he or she has sold short may rise sharply, hitting the investor with large losses.

5.5.3 OPTIONS.

Another way to leverage a relatively small outlay of cash is to buy "call" options to purchase a particular stock later at close to its current price. If the market price rises, the trader can exercise the option, making a big profit by then selling the shares at the higher market price (alternatively, the trader can sell the option itself, which will have risen in value as the price of the underlying stock has gone up). An option to sell stock, called a "put" option, works in the opposite direction, committing the trader to sell a particular stock later at close to its current price. Much like short selling, put options enable traders to profit from a declining market. But investors also can lose a lot of money if stock prices do not move as they hope.

5.5.4 COMMODITIES AND OTHER FUTURES

Commodity "futures" are contracts to buy or sell certain goods at set prices at a predetermined time in the future. Futures traditionally have been linked to commodities such as wheat, livestock, copper, and gold, but in recent years growing amounts of futures also have been tied to foreign currencies or other financial assets as well. They are traded on about a dozen commodity exchanges in the United States, the most prominent of which include the Chicago Board of Trade, the Chicago Mercantile Exchange, and

several exchanges in New York City. Chicago is the historic center of America's agriculture-based industries. Overall, futures activity rose to 417 million contracts in 1997, from 261 million in 1991. Commodities traders fall into two broad categories: hedgers and speculators. Hedgers are business firms, farmers, or individuals that enter into commodity contracts to be assured access to a commodity, or the ability to sell it, at a guaranteed price. They use futures to protect themselves against unanticipated fluctuations in the commodity's price. Thousands of individuals, willing to absorb that risk, trade in commodity futures as speculators. They are lured to commodity trading by the prospect of making huge profits on small margins (futures contracts, like many stocks, are traded on margin, typically as low as 10 to 20 percent on the value of the contract).

Speculating in commodity futures is not for people who are averse to risk. Unforeseen forces like weather can affect supply and demand, and send commodity prices up or down very rapidly, creating great profits or losses. While professional traders who are well versed in the futures market are most likely to gain in futures trading, it is estimated that as many as 90 percent of small futures traders lose money in this volatile market. Commodity futures are a form of "derivative" -- complex instruments for financial speculation linked to underlying assets. Derivatives proliferated in the 1990s to cover a wide range of assets, including mortgages and interest rates. This growing trade caught the attention of regulators and members of Congress after some banks, securities firms, and wealthy individuals suffered big losses on financially distressed, highly leveraged funds that bought derivatives, and in some cases avoided regulatory scrutiny by registering outside the United States.

5.6 THE REGULATORS

The Securities and Exchange Commission (SEC), which was created in 1934, is the principal regulator of securities markets in the United States. Before 1929, individual states regulated securities activities. But the stock market crash of 1929, which triggered the Great Depression, showed that arrangement to be inadequate. The Securities Act of

1933 and the Securities Exchange Act of 1934 consequently gave the federal government a preeminent role in protecting small investors from fraud and making it easier for them to understand companies' financial reports.

The commission enforces a web of rules to achieve that goal. Companies issuing stocks, bonds, and other securities must file detailed financial registration statements, which are made available to the public. The SEC determines whether these disclosures are full and fair so that investors can make well-informed and realistic evaluations of various securities. The SEC also oversees trading in stocks and administers rules designed to prevent price manipulation; to that end, brokers and dealers in the over-the-counter market and the stock exchanges must register with the SEC. In addition, the commission requires companies to tell the public when their own officers buy or sell shares of their stock; the commission believes that these "insiders" possess intimate information about their companies and that their trades can indicate to other investors their degree of confidence in their companies' future.

The agency also seeks to prevent insiders from trading in stock based on information that has not yet become public. In the late 1980s, the SEC began to focus not just on officers and directors but on insider trades by lower-level employees or even outsiders like lawyers who may have access to important information about a company before it becomes public.

The SEC has five commissioners who are appointed by the president. No more than three can be members of the same political party; the five-year term of one of the commissioners expires each year.

The Commodity Futures Trading Commission oversees the futures markets. It is particularly zealous in cracking down on many over-the-counter futures transactions, usually confining approved trading to the exchanges. But in general, it is considered a more gentle regulator than the SEC. In 1996, for example, it approved a record 92 new kinds of futures and farm commodity options contracts. From time to time, an especially

aggressive SEC chairman asserts a vigorous role for that commission in regulating futures business.

5.7 The Stock Exchanges of USA

1. New York Stock Exchange
2. American Stock Exchange
3. NASDAQ Stock Market
4. Arizona Stock Exchange
5. Boston Stock exchange
6. Chicago Stock Exchange
7. Chicago Board of Options Exchange
8. New York Mercantile Stock Exchange
9. Philadelphia Stock exchange
10. Pacific Stock Exchange

5.7.1 NEW YORK STOCK EXCHANGE

5.7.1.2 MISSION STATEMENT

To add value to the capital-raising and asset- management process by providing the highest- quality and most cost-effective self-regulated marketplace for the trading of financial instruments, promote confidence in and understanding of that process, and serve as a forum for discussion of relevant national and international policy issues.

The New York Stock Exchange (NYSE) is the oldest and most popular organized stock exchange in the United States. It has 1,400 seats that allow access to the trading floor and members could pay from $500,000 to $1,000,000 for each seat. Large brokerage companies may own as many as twenty seats at a time. The NYSE lists about 2,400 stocks from approximately 1,900 companies. The companies must meet requirements

related to profitability and size, which virtually guarantee that the companies will be among the largest, most profitable, publicly held companies in the country.

The next largest exchange, and arguably the hottest, is NASDAQ. The NASDAQ is a high tech exchange whose listing includes Microsoft, Intel and others. While not all companies on the NASDAQ are high tech, or even large, it is an effective alternative to the NYSE.

Another exchange is the American Stock Exchange (AMEX) also located in New York City. It is much smaller than the NYSE though, having only 660 seats and 1,000 listed stocks. Overall, the companies represented on the AMEX tend to be smaller and more speculative than those listed on the NYSE. There are also regional stock exchanges that include Chicago, Pacific, Philadelphia, Boston, and Memphis. Many of these exchanges originally listed corporations that were either too small or too new to be listed on the NYSE or AMEX. Today, however, many companies have dual listings on the NYSE or AMEX and a regional exchange.

Stock Exchanges and the performance of companies are monitored by what are called stock market indexes. An index is a way to measure the overall performance of the market. The most well known index is Dow Jones Industrial Average. "The Dow," as it is called is the most popular measurement of stock market performance for the NYSE, measuring 30 representative stocks. A point change for the Dow equals a 45 cent change in the total price of all 30 stocks. Another measure is the Standard & Poor's 500 (S&P 500) that uses the price changes of 500 representative stocks on the NYSE, AMEX, and OTC markets. Because the sum of 500 stock prices would be too large, the measurement is given an index number.

5.7.2 NYSE COMPOSITE INDEX METHODOLOGY GUIDE

5.7.2.1 INDEX OVERVIEW AND DESCRIPTION

The New York Stock Exchange (NYSE) Composite Index (Symbol: NYA), established in 1966, is designed to measure the performance of all common stocks listed on the NYSE, including ADRs, REITs and tracking stocks. It is a measure of the changes in aggregate market value of approximately 2,000 NYSE-listed U.S. and non-U.S. stocks, adjusted to eliminate the effects of capitalization changes, new listings and delistings. The index is weighted using free-float market capitalization, and calculated on both price and total return basis. In an effort to modernize and align its index methodology with those of other popular broad-based U.S. indexes, the Exchange reintroduced the NYSE Composite Index in January 2003 under a new methodology that is fully transparent and rule-based. The NYSE Composite is calculated and maintained by Dow Jones Indexes. A comparison of the index's old versus new methodology is summarized in the following table.

	Old Methodology	New Methodology
Security class for eligible inclusion		
Common stocks	Yes	Yes
ADRs	Yes	Yes
Tracking Stocks	Yes	Yes
REITs	Yes	Yes
Closed-end funds	Yes	No
ETFs	Yes	No
Preferred stocks	No	No
Derivatives	Yes	No
Shares of beneficial interest	Yes	No
Trust units	Yes	No
Limited partnerships	Yes	No
Weighting	Full market capitalization	Float-adjusted market cap
Base Date	December 31, 1965	December 31, 2002
Base Value	50	5,000
Maintained/Calculated by	Securities Industry Automation Corp.	Dow Jones Indexes
Reconstitution/Rebalancing	Ongoing	Ongoing
Share Updates (<10%)	Daily	Quarterly
Return Calculations	Price return index	Price and total return indexes

5.7.2.2 KEY FEATURES

5.7.2.2.1 MEMBERSHIP CRITERIA

A company must have its shares listed on the New York Stock Exchange in order to be eligible for inclusion in the NYSE Composite Index. Only common stocks, ADRs, REITs and tracking stocks listed on the NYSE are eligible for inclusion; multiple classes of shares can also be included in the Composite. Preferred stocks, closed-end funds, exchange-traded funds, trust units, shares of beneficial interest, limited partnerships, and derivative securities such as warrants and rights are not eligible.

5.7.2.2.2 BASE DATE AND BASE VALUE

The NYSE Composite Index has a base date of December 31, 2002. The closing market value on this date was given an index value of 5,000 (December 31, 2002=5,000).

5.7.2.2.3 CALCULATION AND DISSEMINATION

Like the Consumer Price Index, the NYSE Composite Index is a Laspeyres index which measures price changes against a fixed base period quantity weight. A detailed explanation of Laspeyres's formula is provided in Section 5.2. The Composite is calculated whenever the New York Stock Exchange is open using the latest traded price on the NYSE for each company in the index. Following the determination of the previous day's closing index value, the Composite Index value for the current day are updated and disseminated following the opening of NYSE trading on a real-time basis beginning when the first traded price of any of the index components are received.

If trading in a stock is suspended while the NYSE is open, the last traded price for that stock on the NYSE is used for all subsequent index computations until trading resumes.

If trading is suspended before the opening, the stock's adjusted closing price from the previous day is used to calculate the index. Until a particular stock opens, its adjusted closing price from the previous day is used in the index computation. These prices are computed on both a price and total-return basis in U.S. dollars. The price index is updated on a real-time basis, while the total-return index is calculated and disseminated on an end-of-day basis. The Composite is calculated and maintained by Dow Jones Indexes.

5.7.2.2.4 WEIGHTING

The NYSE Composite Index is weighted by float-adjusted market capitalization, rather than full market capitalization, to reflect the actual number of shares available to investors. Detail on the float-adjustment rules is provided in Section 6.

5.7.2.2.5 DIVIDEND TREATMENT

Normal dividend payments are not taken into account in the price index, whereas they are reinvested and accounted for in the total return index. However, special dividends from non-operating income require index divisor adjustments to prevent the distributions from distorting the price index.

5.7.2.2.6 INDEX MAINTENANCE

Index maintenance includes monitoring and implementing the adjustments for company additions and deletions, share changes, stock splits, stock dividends, corporate restructurings, spin-offs, or other corporate actions. Some corporate actions, such as stock splits and stock dividends, require simple changes in the common shares outstanding and the stock prices of the component companies in the Composite. Other corporate actions, such as share issuances, change the aggregate free-float adjusted market capitalization of

the Composite and, therefore, require an index divisor adjustment as well. To avoid index discontinuity due to adjusting for corporate actions, offsetting index divisor adjustments are ordinarily made. By adjusting the index divisor for the changes in the aggregate free-float adjusted market capitalization of the Composite arising from one or more corporate actions affecting component stocks, the value of the index remains constant. This helps keep the value of the index accurate as a barometer of stock market performance and ensures that the movement of the index will not be improperly affected by corporate actions in the component stocks. Any corporate action, whether it requires divisor adjustments or not, will be implemented after the close of trading on the day prior to the ex-date of such corporate actions. Whenever possible, changes to the index's components will be announced at least two business days prior to their implementation date.

5.7.2.3 CONSTITUENT CHANGES

• ADDITIONS

Additions to the Composite can be a result of new NYSE listings, IPOs, spin-offs and takeovers. New listings and IPOs are added to the Composite at the close of trading on their first day of trading on the NYSE. If an index constituent spins off a portion of its business to form one or more new companies, all new companies will be immediately included in the Composite. If an index constituent merges with another company, the newly formed company becomes a member of the Composite after the close of trading on the effective date of the merger provided it meets the membership criteria.

•DELETIONS

Deletions from the Composite can be a result of NYSE delistings, takeovers, and bankruptcies. A stock delisted from the NYSE is deleted from the Composite on the day it stops trading on the Exchange. If an index component is taken over by another component company, the former will be removed from the index immediately upon

completion of the takeover. A component company in bankruptcy proceedings that continue to trade will stay in the index until delisted.

5.7.2.3.1 CHANGES IN SHARES OUTSTANDING

Shares outstanding for component stocks are constantly changing. Share changes less than 10% are implemented once a quarter, ordinarily after the third Friday of March, June, September and December. If the number of outstanding shares for an index component changes by more than 10% due to a corporate action, such as those listed in Section 5.2., the company's share outstanding will be updated after the close of trading on the day prior to the ex-date of the corporate action.

5.7.2.4 INDEX FORMULA

The Composite Index is calculated using a Laspeyres formula. This formula is used for the calculation of the return index and the price index. The only difference is that the divisor Dt is different for the two indexes. The index is computed as follows:

$$\mathbf{Index_t = \{ (p_{it} \times q_{it}) / C_t \times (p_{io} \times q_{io}) \} \times Base\ value\ Index}$$

$$\mathbf{= \{M_t / B_t\} \times Base\ Value\ Index}$$

The above mentioned formula can be simplified as:

$Index_t = Mt/Dt$

Where:

Dt = divisor at time (t)

n = the number of stocks in the index

pi0 = the closing price of stock i at the base date (December 31, 2002)

qi0 = the number of shares of company i at the base date (December 31, 2002)

pit = the price of stock i at time (t)

qit = the number of shares of company i at time (t)

Ct = the adjustment factor for the base date market capitalization

t = the time the index is computed

Mt = market capitalization of the index at time (t)

Bt = adjusted base date market capitalization of the index at time (t) Dividend payments are not taken into account in the price index, whereas dividend payments are reinvested in the index sample of the total return index. Any dividend larger than 10% of the equity price is considered a special cash-dividend, which requires a divisor adjustment. The adjustment protects the index from the effects of changes in index composition and the impact of corporate actions.

5.7.2.5 COMPUTATIONAL PRECISION

Index values are rounded to two decimal places and divisors are stored in a double precision floating point binary field. Any values derived by the index calculation engine from a corporate action used for the divisor adjustments and index computations are rounded to seven decimal places.

5.7.2.6 DATA CORRECTION POLICY

To maintain a high standard of data integrity, a series of procedures have been implemented to ensure accuracy, timeliness and consistency. Input prices are monitored using a variety of computerized range-check warning systems for both ticker-plant and real-time index systems. Redundant sources of market data and corporate action information are also used. Various verification and audit tasks are performed to ensure the quality of the real-time data feeds and related market data. While every effort is taken to ensure the accuracy of the information used for the index calculation, there is no guarantee that the index will be error-proof. An index error may occur due to incorrect or missing data, including trading prices, exchange rates, shares outstanding and corporate actions, due to operational errors or other reasons.

• INTRADAY CORRECTIONS

Reasonable efforts are employed to prevent erroneous data from affecting the index. Corrections will be made for bad prices and incorrect or missing corporate actions as soon as possible after detection. Since the index is calculated on a real-time basis, an incorrect index value tick will not be fixed retroactively. Incorrect daily high/low index values will be corrected as soon as practicable.

• INDEX-RELATED DATA AND DIVISOR CORRECTION

Incorrect pricing and corporate action data for individual issues in the database will be corrected upon detection. In addition, an incorrect divisor of the index, if discovered within five days of its occurrence, will always be fixed on the day it is discovered to prevent an error from being carried forward. If a divisor error is discovered more than five days after occurrence, the adjustment will depend upon how significant the error is, how far back the error occurred and the feasibility of performing the adjustment.

5.7.2.7 FLOAT ADJUSTMENT

The NYSE Composite Index is constructed and weighted using free-float market capitalization. Float-adjusted rather than full market capitalization is used to reflect the number of shares actually available to investors.

5.7.2.8 QUALIFICATIONS

A company's outstanding shares are adjusted by block ownership to reflect only truly tradable and investable shares. The following four types of block ownership are considered during float adjustment:

• Cross ownership – shares that are owned by other companies (including banks and life insurance companies);
• Government ownership – shares that are owned by governments (central or municipal) or their agencies;
• Private ownership – shares that are owned by individuals, families or charitable trusts and foundations;
• Restricted shares – shares that are not allowed to be traded during a certain time period.
However, a company's outstanding shares are not adjusted by institutional investors' holdings, which include, but are not limited to, the following categories:
• Custodian nominees;
• Trustee companies;
• Mutual funds (open-end and closed-end funds);
• Investment companies.

5.7.2.9 THRESHOLD

A company's outstanding shares are adjusted if, and only if an entity in any of the four qualified categories listed above owns 5% or more of the company. Its shares will not be adjusted if the block ownership is less than 5%.

5.7.2.10 FOREIGN RESTRICTION

The float adjustment rules also apply to foreign companies that have cross ownership of 5% or more. If a government has a foreign ownership restriction of 5% or more, the lesser of free-float shares or the portion that is available for foreign investment will be used for index calculation.

5.7.3 DOW JONES INDUSTRIAL AVERAGE

5.7.3.1 METHODOLOGY OVERVIEW

5.7.3.1.1 DEFINITION OF FREE-FLOAT

Dow Jones Total Market Indexes indexes are constructed and weighted using free-float market capitalization rather than full market capitalization. Shares are adjusted for free-float if cross ownership, government ownership, private ownership or restricted shares account for ownership of 5% or more.

Adjustments are also made to reflect foreign ownership restrictions. For restrictions of 5% or more, the lesser of the number of free-float shares or shares available for foreign investment is used.

5.7.3.1.2 UNIVERSE CREATION

The Dow Jones Total Market Indexes universe is created by first aggregating all stocks traded on the local exchanges of eligible countries and assigning each company to the country of its primary market listing. After screening out uncommon issues and illiquid stocks, each remaining company is assigned to an industry group according to its primary line of business. The selection process then proceeds at the country level (for developed markets excluding Europe) or at the aggregate level (for all Europe and all emerging markets).

5.7.3.1.3 INITIAL SELECTION

A. Rank the entire Universe by free-float market capitalization.

B. (Large-Cap Selection): Select stocks in descending order until a cumulative 70% of the universe is included in the large-cap index.

C. (Mid-Cap Selection): Select from the remaining stocks in descending order until a cumulative 90% of the market cap has been included. These stocks become mid-cap components.

D. (Small-Cap Selection): From the remaining pool, select stocks in descending order, skipping companies that fall within the bottom 1% of stocks by free-float market capitalization or within the bottom .01% of stocks by turnover, until 95% of the universe's cumulative market cap has been included in the index. These stocks make up the small-cap index.

5.7.3.1.4 SUBSEQUENT SELECTIONS/REVIEWS

A. Rank the entire universe by free-float market capitalization.

B. Assign new large-cap and mid-cap companies (IPOs) to the large-cap and mid-cap indexes based on size without buffers (0-70% large-cap, >70-90% mid-cap).

C. Retain current large-cap components that fall within the top 75% of cumulative free-float market capitalization in the large-cap index; retain current mid-cap components that fall between 67.5% and 92.5% in the mid-cap index.

D. Reclassify current mid-cap or small-cap components that rank above 67.5% into the large-cap index; reclassify current small-cap companies that rank above 85% into the mid-cap index.

E. Include all remaining companies in the small-cap universe.

F. If comparable volume data are available, remove all companies with less than one quarter of history. Re-sort the small-cap universe based on a combined rank of free-float market capitalization and average quarterly turnover.

G. Add companies through 93% cumulative free-float market capitalization to the small-cap index.

H. Remove from the remaining lists of components and non components any companies that fall within the bottom 1% of stocks by free-float market capitalization or within the bottom .01% of stocks by turnover.

I. Beginning with the components list, and then moving to the non components list if necessary, add companies to the small-cap index until universe coverage reaches 95%.

5.7.3.2 KEY FEATURES

- **DIVIDEND TREATMENT**

Normal dividend payments are not taken into account in the price index, whereas they are reinvested in the index sample of the total return index. However, special dividends from non-operating income require index divisor adjustments to prevent the distributions from distorting the price index.

- **BASE DATE AND BASE VALUE**

The DJGI-World Index has a base date of December 31, 1991, when the index's value was set equal to 100 (December 31, 1991 = 100). As of April 30, 2004, the base date for all the indexes within the DJGI family also was December 31, 1991.

- **CALCULATION AND DISSEMINATION**

Like the Consumer Price Index, the DJGI indexes are Laspeyres indexes. A Laspeyres index is one that measures price changes against a fixed base period quantity weight. A detailed explanation of Laspeyres's formula is provided in Section 8.2.

The closing values of the DJGI indexes are calculated on a 24-hour day that ends at 5:30 p.m. New York time, using the official WM closing spot rates as reported by Reuters and each component stock's closing price on its primary market during the previous 24-hour period.

Following the determination of the previous day's closing price, the DJGI index values for the current day are updated and disseminated on a real-time basis beginning at 5:30 p.m. whenever any of the exchanges represented in the index are open. Indexes not affected by that trading, however, are not updated. For example, because markets in Taiwan and South Korea trade on Saturdays, their country indexes are updated, along with any regional indexes they belong to and the DJGI World Index, during those trading sessions. Local currency versions of other country and regional indexes are not affected by the Saturday trading, although the U.S. dollar versions of all indexes reflect fluctuations in currency valuations over that period.

If trading in a stock is suspended while its market is open, the last traded price for that stock is used for all subsequent index computations until trading resumes. If trading is suspended before the opening, the stock's adjusted closing price from the previous day is used to calculate the index. Until a particular stock opens, its adjusted closing price from the previous day is used in the index computation. If a market is closed due to an exchange holiday, the previous adjusted closing price for each of its index components, coupled with the most-recent intraday currency bid price, is used to determine the index's current U.S. dollar value. These prices are computed on both a price and total-return basis in both local currencies and in U.S. dollars.

All non-U.S. dollar stock prices are converted to U.S. dollars based on the latest available relevant intraday currency bid price. Every index in the DJGI family can be converted into any other currency upon request.

- **INDEX DIVISOR ADJUSTMENTS**

The market capitalization of indexes in the DJGI family is affected by numerous events other than daily security price changes. At the company level, market caps are affected by share changes caused by corporate actions such as takeovers, secondary offerings, repurchase programs, rights offerings and spinoffs. At the country index level, new companies are added to market segments, while others vanish due to cross-border mergers, bankruptcies and corporate reorganizations.

In order to insulate the members of the DJGI family from the effects of index component changes and corporate actions, Dow Jones divides each affected index's market cap by an adjustment factor called the index divisor after the close of trading on each day when there is a change in either index membership or shares outstanding for an index component. (This procedure, which links each successive weighted basket of securities in the index with the proceeding basket, is called "chaining," and the result is technically referred to as a Laspeyres chain index.) The initial index divisor was, of course, exactly 1/100 of the index's base market capitalization. That divisor, which was used to calculate changes in the index on the first trading day of January 1992, gave a starting value of 100.

5.7.3.3 INDEX CONSTRUCTION

Each index of the DJGI family is constructed according to four basic steps: selecting the eligible countries, identifying the broad market, defining the investable universe and selecting the initial components.

5.7.3.3.1 LIQUIDITY

Securities that have had more than ten nontrading days during the past quarter are excluded from the investable universe.

5.7.3.3.2 INITIAL COMPONENT SELECTION

The following steps are followed to create indexes that cover 95% of the underlying free-float market capitalization at the country level for developed markets (excluding Europe) and at the region/aggregate level for Europe and emerging markets (all Europe and all emerging markets).

1. The index universe is sorted by free-float market capitalization.

2. Size category definitions are established as follows:

The sum of the free-float market capitalizations of stocks above the 70th percentile is established as the cut-off for large-caps.

The sum of the free-float market capitalizations of stocks above the 90th percentile is established as the cut-off for mid-caps.

3. Stocks in the top 95% of the index universe by free-float market capitalization are selected as components of the broad country or region index, skipping stocks that fall within the bottom 1% of the universe by free-float market capitalization and within the bottom .01% of the universe by turnover.

4. The components of the broad country or region index are re-ranked by full market capitalization.

5. Stocks are categorized into size classes as follows based on stocks' float-adjusted market values:

Stocks falling above the large-cap cut-off established in Step 2 are designated as large-caps.

Stocks falling below the large-cap cut-off but above the mid-cap cut-off established in Step 2 are designated as mid-caps.

• Remaining stocks are designated as small-caps.

• TopCaps are defined as large-caps plus mid-caps.

• LowCaps are defined as mid-caps plus small-caps.

DOW JONES and NYSE Composite Index are calculated with the same formula of Laspeyers.

5.7.3.4 QUARTERLY REVIEW

The following steps are followed to reselect index components during the quarterly review process.

1. The universe is ranked by free-float market capitalization, and size categories are established as described in Step 2 of the Selection Process.
2. New large-cap and mid-cap companies (IPOs) are assigned to the large-cap and mid-cap indexes based on full market cap (above the 70th percentile large-cap, above the 90th percentile mid-cap).
3. Current large-cap components that rank above the 75th percentile when sorted by full market cap are retained in the large-cap index; current mid-cap components that rank between the

67.5th and 92.5th percentiles when sorted by full market cap are retained in the mid-cap index.

4. Current mid-cap or small-cap components that rank above the 67.5th percentile when sorted by full market cap are reclassified into the large-cap index; current small-cap that rank above

85^{th} percentile when sorted by full market cap are reclassified into the mid-cap index.

5. Remaining companies are re-sorted based on full market capitalization and average quarterly turnover. Stocks are added to the small-cap index until 93% of the total universe is represented.
6. Remaining components and noncomponents that fall within the bottom 1% of stocks by free-float market capitalization or within the bottom .01% of stocks by turnover are excluded from further selection.
7. Beginning with the components list, and continuing with the noncomponents list if necessary, companies are added to the small-cap index until total universe coverage reaches 95%.

Quarterly reviews are implemented during March, June, September and December. Both component changes and share changes become effective at the opening on the first Monday after the third Friday of the review month. These changes are implemented

simultaneously in every index, including economic sectors and industry groups, to which the company belongs.

Changes to the index are implemented after the official closing values have been established. All adjustments are made before the start of the next trading day. Constituent changes that result from the periodic review will be announced at least two business days prior to the implementation date.

5.7.3.5 ONGOING MAINTENANCE

In addition to the scheduled quarterly review, the DJGI family is reviewed on an ongoing basis. Changes in index composition and related weight adjustments are necessary whenever there are extraordinary events such as delistings, bankruptcies, mergers or takeovers involving index components. In these cases, each event will be taken into account as soon as it is effective. Whenever possible, the changes in the index's components will be announced at least two business days prior to their implementation date.

5.7.3.6 MERGERS

If two index constituents merge, their component positions will be replaced by the surviving company immediately. Dow Jones Indexes will adjust the float-adjusted shares outstanding for the surviving company to reflect the changes in both its total shares and any float blocks, regardless of the percentage changes in the survivor. If an index constituent merges with a non component company, its component position will be replaced by the new company, if the new company meets all eligibility criteria.

5.7.3.7 TAKEOVERS

If an index component is taken over by another component company, the former will be removed from the index immediately upon completion of the takeover. If an index component is taken over by a non component company, it will be replaced by the acquiring company immediately, if the acquiring company meets all the eligibility criteria.

5.7.4 FTSE

5.7.4.1INTRODUCTION

The **FTSE** is the **Financial Times Stock Exchange** index, a leading set of United Kingdom stock market indices. The Financial Times (or FT) is the UK's leading financial newspaper.

In common usage the FTSE (pronouncied *futsee*) refers to the FTSE 30 stock index which is an index of the 30 leading shares traded on the London Stock Exchange. However there are many other indices also within the FTSE stable including the FT-All Share index (covering the whole of the UK market) and FT indices that cover international stock markets and indeed the FT-World index.

These various FT indices are formally referred to as the FT Actuaries indices and the basis of construction is considered to be state-of-the-art; there are some indices around the world that use potentially misleading forms of calculation e.g. price rather than market capitalisation weighted price indices.

5.7.4.2 ABOUT FTSE

FTSE is a world-leader in the creation and management of equity indices. It is jointly owned by the London Stock Exchange and the Financial Times, but operates as a wholly autonomous company. With offices in London, New York, Paris, Frankfurt and Hong

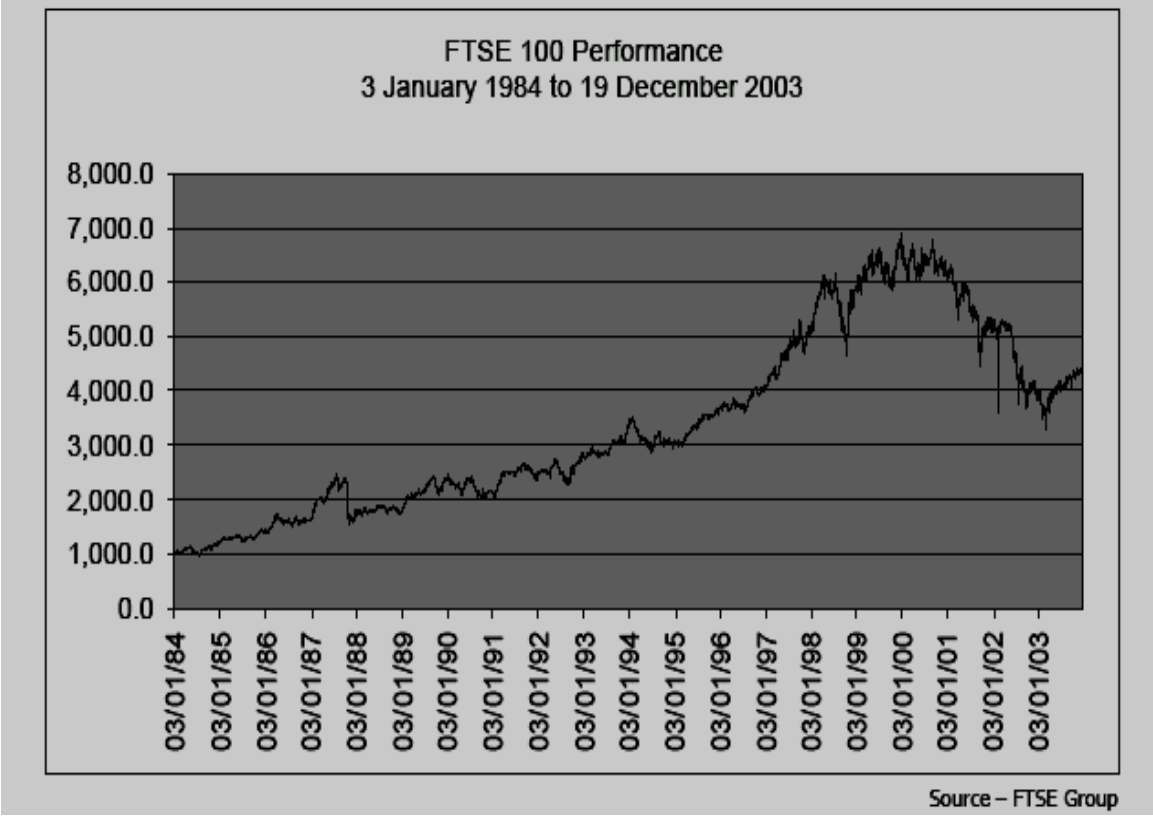
Kong, FTSE services clients in 77 countries worldwide. It manages and develops globally recognised indices ranging from the FTSE All-World Index to the real time FTSE Eurotop series and the FTSE 100. The company has collaborative arrangements with the London, Amsterdam, Brussels, Norex, Cyprus, Euronext, Athens, Luxembourg and Madrid stock exchanges, as well as with Nikkei of Japan (Nihon Keizai Shimbun, Inc).

All FTSE indices follow FTSE Global Classification System and are used extensively by investors worldwide for investment analysis, performance measurement, asset allocation and for creating a wide range of index tracking funds. Committees of senior fund managers, derivatives experts, actuaries and experienced practitioners independently review all changes to the indices ensuring that they are accurate, timely and without bias. Real time FTSE indices are calculated on systems managed by Reuters. Prices and FX rates used are supplied by Reuters.

5.7.4.3 KEY FACTS – FTSE 100 INDEX, 20 YEARS

- The FTSE 100 started on 3rd January 1984 with a base level of 1,000
- The FTSE 100 is an index containing the largest 100 companies (by market capitalisation) listed on the London Stock Exchange
- The highest closing value of the FTSE 100 to date is 6930.2 points on the 30th December 1999
- The lowest closing value of the FTSE 100 to date is 986.9 points on the 12th July 1984
- The largest one-day fall was –12.22% on 20th October 1987
- The largest one-day rise was +7.89% on 21st October 1987
  The total number of FTSE 100 futures traded on LIFFE in 1984 was 73,500
- The total number of FTSE 100 futures traded on Euronext.LIFFE in 2003 was 18,055.868
- More than 100 million FTSE 100 futures have been traded in 20 years

- ETF assets tracking the FTSE 100 Index, is in excess of US$1.02 billion



5.7.4.4 INDICES CALCULATION METHOD

The FTSE 100 index is calculated using the following formula:

Index = {(p x n) x s x f}/ d

Where:

n = No of securities in index

p = price (latest trade price)

e = exchange rate

s = shares in issue

f = free float factors

d = divisor

CHAPTER # 6 ANALYSIS

6.1 INTRODUCTION

To discuss the Pakistan Stock Market we may refer to the data of Karachi Stock Exchange being the premier stock market of the country. Most of the companies listed on Lahore and Islamabad Stock Exchanges are also listed on Karachi Stock Exchange. The turnover of Karachi Stock Exchange is fairly contributed by these two fast growing regional Stock Exchanges whose members send the unexecuted orders at their exchange to the Karachi Stock Exchange Floor. This is an international phenomenon e.g. India has 22 Stock Exchanges but the Bombay Stock Exchange is regarded as the Indian Stock Exchange. Similar is the case of the New York Stock Exchange for USA and the Tokyo Stock Exchange for Japan.

At the backdrop of a significant improvement in Pakistan's economy over the last three years that include, among others, a comfortable balance of payments position, strong build up in foreign exchange reserves, stable exchange rate, surplus in current account, relatively low budget deficit, low inflation, declining interest rates, and improved credit rating in international capital markets, the current fiscal year (2002-03) was envisaged to consolidate these gains and further build upon the strong foundation laid during these years. There were some grounds for optimism for the current fiscal year (2002-03) as world economy was showing signs of recovery during the first half of the year 2002 after the significant downturn in the late 2001, caused by the events of September 11 and the subsequent developments thereafter. In the wake of several adverse developments the optimism for global economic recovery largely dissipated during the later half of the year 2002. These developments include a series of major corporate scandals and bankruptcies in the United States, less than satisfactory performance of the US economy during the first and second quarters of 2002, weaker performance of EURO area economies and continued difficulties with Japanese economy. This situation was further aggravated not only by the threat but actual war in Iraq, resulting in the rise of price of oil in international market owing to increased oil stockpiling. Brent crude oil prices averaged $ 27.6 per barrel in December 2002 but increased to an average of $ 30.19 per barrel for the

period January 1-21, 2003. Since mid-June 2002, the prices of oil gone up by over 30 percent and currently averaging above $ 32 per barrel. As a result of these developments the world economic outlook remained subdued and global trade remained sluggish during the later half of the year 2002 and first quarter of 2003.

Notwithstanding subdued world economic outlook, sluggish global trade, rising international price of oil, and uncertainty arising out of the threat as well as of actual war in Iraq, Pakistan's economy has once again displayed remarkable resilience. The performance of the first eight months of the current fiscal year has remained encouraging and therefore, provides grounds for optimism for the remaining months of the fiscal year.

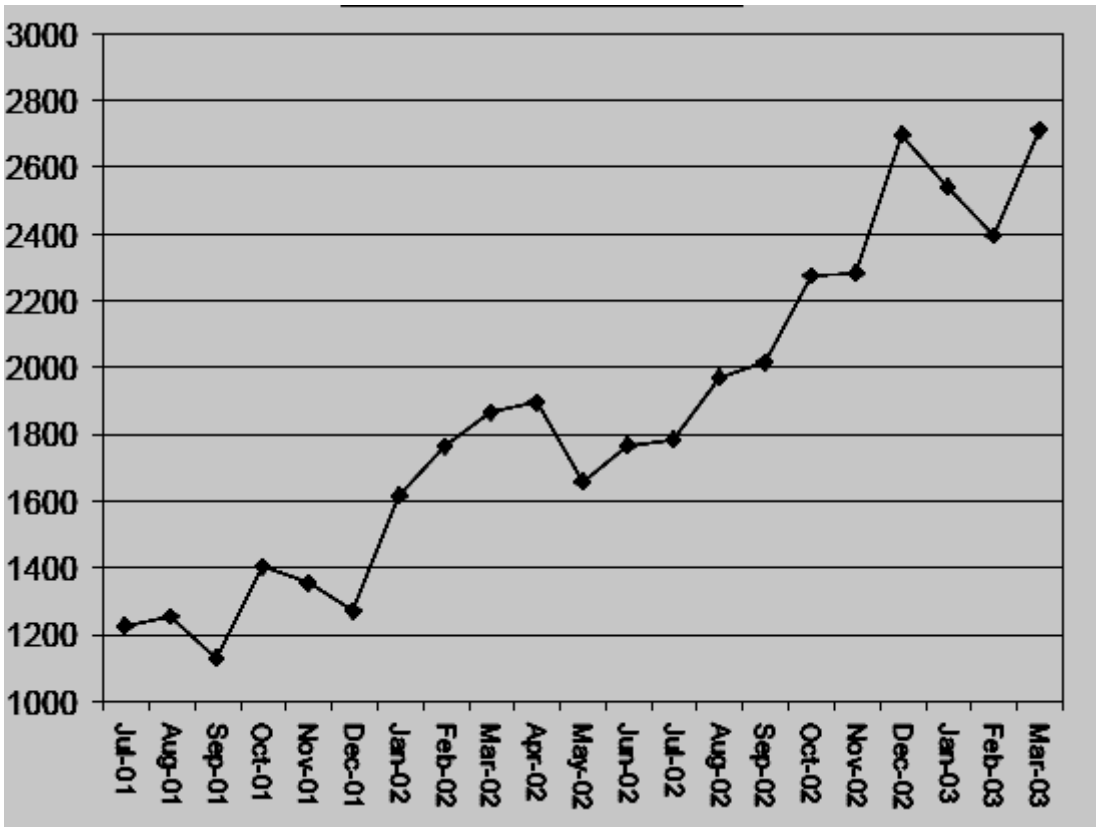
6.2 ANALYSIS OF STOCK MARKET

Pakistan's stock markets have remained buoyant during the first nine months (July-March) of the current fiscal year. The Karachi Stock Exchange, KSE-100, has witnessed a phenomenal growth, rising from 1770.1 points in June 2002 to an all time high of 2715.7 points at the end of March 2003, thereby registering an increase of 53.4 percent during the first nine months of the current fiscal year. The aggregate market capitalization of the KSE on the other hand, also surged 44.3 percent, rising from Rs 407.6 billion to Rs 588.3 billion during the same period [See Table 7, Figs-6 & 7]. In terms of US dollar, the market capitalization increased by 50.4 percent, rising from $ 6.7 billion to $ 10.2 billion during the same period. In terms of GDP, the aggregate market capitalization jumped from 10.0 percent to 14.6 percent during the same period.

Monthly Business Trends at KSE		
Last Working Day of the Month	**KSE Share Index**	**Aggregate Market Capitalization (Rs Billion)**
July 2001	1228.9	311.3
August 2001	1258.4	314.9
September 2001	1133.4	282.8
October 2001	1406.1	340.2
November 2001	1358.2	326.2
December 2001	1273.1	292.9
January 2002	**1620.2**	**345.0**
February 2002	1766.0	390.0
March 2002	1868.1	427.9
April 2002	1899.0	424.7
May 2002	1663.3	383.3
June 2002	**1770.1**	**407.6**
July 2002	1787.6	411.6
August 2002	1974.6	450.8
September 2002	2018.8	458.3
October 2002	2278.5	544.6
November 2002	2285.9	505.8
December 2002	2701.4	595.2
January 2003	2545.1	554.8
February 2003	2399.2	542.2
March, 2003	2715.7	588.3
Source: State Bank of Pakistan & KSE		

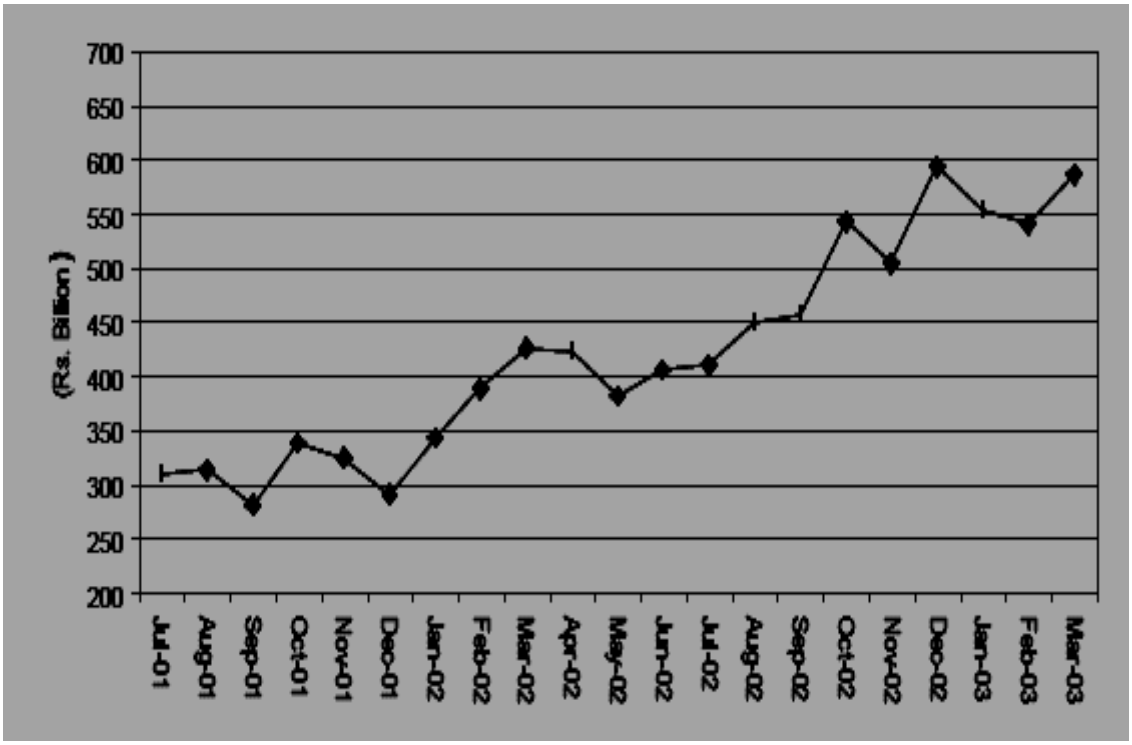
Yet another indicator of impressive performance of the Karachi Stock Exchange has been the extraordinary surge in monthly turnover of shares. The monthly turnover of shares jumped from 2.018 billion in June 2002 to 2.689 billion in March 2003, thus registering an increase of 33.3 percent. Price Earning Ratio during the first nine months of the current fiscal year increased from 8.35 percent to 11.85 percent, thereby recording a hefty increase of 42 percent and showing a healthy growth in corporate earnings.

6.2.1 KSE SHARE INDEX



It would not be out of place to mention that as a result of the unprecedented boom in Karachi Stock Exchange during the calendar year 2002 it was declared as the best performing market in the world. The surge in Pakistan's equity markets during 2002 is undoubtedly the results of a significant turnaround in the economy in general and external account in particular. Even during the first nine months (July-March) of the current fiscal year, the Karachi Stock Exchange has been the best performing market in the region

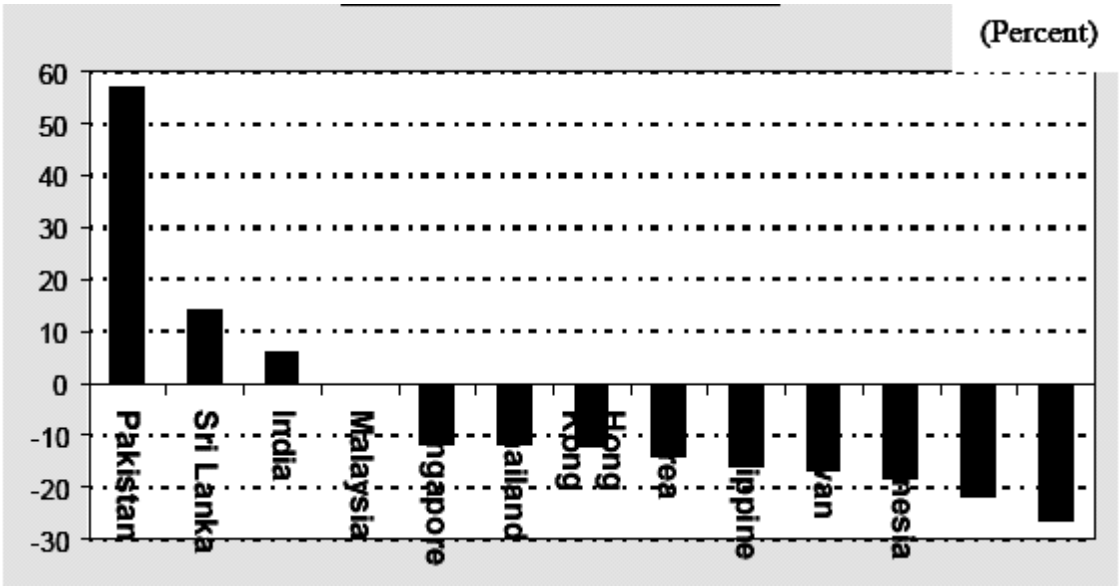
6.2.2 KSE MARKET CAPITALIZATION



With profitability in US dollar standing at 57.03 percent, Pakistan has been the most profitable market in the region followed by Sri Lanka and India. All other markets of Asia Pacific region registered significant losses.

EXCHANGE	INDEX	DATE		CHANGE	
		31-Jul-02	31-Mar-2003	POINTS	%
Pakistan	KSE100	1,787.59	2,715.72	928.13	51.92
Colombo	All Share	700.50	738.95	38.45	5.49
Bombay	BSE 30	2,987.65	3,048.72	61.07	2.04
NYSE	Dowjones	8,736.60	7,992.13	(744.47)	(8.52)
China	Shanghai Composite	1,651.59	1,510.58	(141.01)	(8.54)
Kuala Lumpur	Composite	721.59	635.72	(85.87)	(11.90)
London	FTSE	4,246.20	3,613.30	(632.90)	(14.91)
Hong Kong	Hang Seng	10,267.36	8,634.45	(1,632.91)	(15.90)
Singapore	Straits Times	1,508.36	1,267.82	(240.54)	(15.95)
Tokyo	Nikkei	9,877.94	7,972.71	(1,905.23)	(19.29)

6.2.3 REGIONAL MARKETS INDEX CHANGE IN US $ FROM JUNE 2002 TO DECEMBER 2002



Notwithstanding subdued world economic outlook, sluggish global trade, rising international price of oil, and uncertainty arising out of the threat of war in Iraq,

Pakistan's economy has once again showed remarkable resilience. The performance of the economy during the first seven months of the current fiscal year has been encouraging. Barring cotton (which is likely to be 4.4% lower), production of rice, sugarcane and wheat would be higher in the range of 8-13 percent. On the whole, the 2.7 percent growth target for agriculture is likely to exceed this year. Industrial production has been impressive and grew by 7.0 percent and inflation with 3.5 percent in eight months has remained below the target (4.0%) for the year. Money supply grew by 11.5 percent against the revised target of 16.0 percent for the whole year despite massive inflow of foreign exchange. The State Bank of Pakistan has successfully sterilized the impact of inflow of foreign exchange. The main focus of monetary policy during the remainder period of the current fiscal year would be to continue to focus on sterilization, but at the same time, maintain the country's external competitiveness and keep inflation under close watch. The entire structure of interest rate has declined which reflects the easy monetary policy stance of the State Bank of Pakistan.

Stock market has remained buoyant and Karachi Stock Exchange has been the best performing market in the world not only during the year 2002 but also during the first half of the current fiscal year. Tax collection has not only remained on target but the

CBR has in fact over-performed. Expenditure was prudently managed and as such fiscal deficit remained much below the target for the first half of the fiscal year. Social sector and poverty related expenditures have gathered momentum and were up by 45 percent.

Pakistan's external balance of payments improved significantly despite inhospitable external environment. Both exports and imports have picked up and current account has posted surplus of $ 1.764 billion. Worker's remittances have already achieved the whole year target of $ 2.873 billion in eight months and are likely to reach $ 4.3 billion by the end of the current fiscal year. Foreign investment has also picked up and is likely to reach 1.0 billion in this fiscal year. Exchange rate has remained stable and foreign exchange reserves are approaching $ 11 billion.

Pakistan's debt situation appears to be moving towards a sustainable path. However, much more efforts will be required to achieve debt sustainability. Domestic debt during

the first seven months (July-January) of the current fiscal year increased only by Rs 11.9 billion or 0.7 percent over end-June 2002. When compared with the periods of 1990-99 when domestic debt grew at an average rate of 16 percent per annum, growth of 0.7 percent in the first seven months of the current fiscal year is a remarkable achievement. External debt and foreign exchange liabilities have also been reduced by $ 200 million during the first half of the current fiscal year. However, in terms of **net** debt and liabilities, Pakistan has made considerable progress during three and a half years. The **net** debt liabilities have **declined** by $ 8.23 billion. To achieve debt sustainability, the government is contemplating to pre-pay some of its expensive debt.

The vision for the next 5 years has been prepared at the backdrop of macroeconomic stability achieved during the last three years. Promoting investment, taking the economy at higher growth path without compromising on the hard earned macroeconomic stability, and improving the lives of the common man by creating employment opportunities are the key elements of the vision. Improvement in social indicators will continue to receive highest attention over the next five years. The prerequisites to achieve these goals include: (a) political stability in the country; (b) regional stability; (c) better law and order situation in the country; (d) continuation of consistent and transparent economic policies; (e) completion of the on- going structural reform program; and most importantly (f) continue to remain fiscally responsible.

6.3 STOCK MARKET AS A GROWTH TOOL FOR ECONOMY

Lessons from stock market crashes and the serious economic damage they have caused has made some to paint the stock market as a wasteful venture that relies on rolling over money earned from real business activity without building any real economic value. A former American President, Theodore Roosevelt once claimed that there was no moral difference between gambling on horses or cards and gambling on the stock market.

In spite of this conception, the stock market without doubt has been acknowledged all over the world as vital for long-term economic growth. Several empirical studies have

proved that there is a strong positive correlation between the level of sophistication of a country's stock market and its level of economic growth and development. Countries with well-developed stock markets generally tend to enjoy higher economic growth and development than those with underdeveloped stock markets. A study was conducted on the link between economic growth and financial markets. The study found out that stock market liquidity is a good predictor of economic growth even after controlling for other factors such as education, initial level of income and political stability. It also found out that the size of the stock market in relation to GDP is higher in rich economies than in poor ones.

6.3.1 SITUATION IN PAKISTAN

In Pakistan, the liquidity of the stock market and its size in relation to GDP are relatively low, confirming the fact that the economy remains highly underdeveloped. Liquidity (value of trade in relation to market capitalization) of the Karachi Stock Exchange in 1999 was only 2% and the size of the market to GDP is estimated to be about 20%. The stock exchange has facilitated the mobilization of cheap long-term capital by companies for expansion. It is important to stress that the mobilization of long term capital by businesses would probably be nonexistent without the capital market. The capital market, on the other hand, would not have been dynamic and very effective without the existence of the stock exchange. This is because savers in a majority of cases do not like to relinquish control of their savings for long periods, so increased liquidity (made possible by stock exchanges) makes it easier for businesses and governments to finance long-term investments. The increased liquidity of capital markets and not advancement in technology was what triggered economic growth in the 18th century.

6.3.1.1 CAPITAL MOBILIZATION:

In Pakistan for instance, the reduction in liquidity risk as a result of the emergence of the Karachi Stock Exchange has improved confidence in the capital market and thus facilitated long-term capital mobilization. The Stock market of Pakistan has helped mobilize RS. 154 billion worth of long term capital through right issues and initial public offers since the inception of the exchange. The mobilization of cheap and long term capital does not only help beneficiary companies to expand and thus become more profitable but it also enables companies to produce more goods and services to satisfy the needs of households and institutions. Stock exchanges also facilitate the mobilization of revenue by governments for the purpose of financing its projects. In the more developed stock markets, governments and local authorities raise funds through the stock exchange by issuing government bonds and municipal bonds. Governments can also benefit from higher tax revenues from companies that become more profitable after mobilizing long-term capital for expansion.

6.3.1.2 CAPITAL SOLUTION

Emerging economies like Pakistan often require large amounts of capital to finance growth while more advanced economies tend to have surplus funds. It is no secret that the emergence of stock exchanges in several developing countries in the past decade has facilitated the flow of capital from the so-called advanced economies to the third world and in the process helped to reduce the perennial problem of inadequate capital in many developing countries. Global capital has become very mobile and emerging economies which have benefited most from increasing globalization are those with relatively well developed stock markets. It has become imperative for developing economies that want to benefit from increasingly mobile global capital to develop their capital markets by setting up and developing stock exchanges or even joining hands to develop regional stock exchanges.

6.3.1.3 EMPLOYMENT OPPORTUNITIES

Stock market has also played the crucial role of employment generation. The establishment of financial institutions such as brokerage houses and investment banks often accompanies the emergence of stock exchanges. These institutions offer employment opportunities for economists, financial and investment analysts, accountants, lawyers etc. In Pakistan, the emergence of the stock exchange has led to the setting up of several brokerage houses that employ a significant number of people. Capital raised through stock exchange flotations could be used by companies to expand and in the process create more jobs. Projects being undertaken by government with funds raised through the stock exchange also offer employment opportunities.

6.3.1.4 INCOME TAX REVENUE

Governments also benefits from higher income tax revenue when an expanded capital market creates more jobs. The consumption component of the country's economy has grown because of a larger labor force and thereby expanded market for goods and services.

6.3.1.5 REDUCED FINANCIAL RISK

The existence of a stock exchange in the country has reduced the economy's financial risk by diversifying its financial system. For example, the capital markets (through the various stock exchanges) provides alternative sources of finance. The development of products such as mutual funds that are available in stock markets with stock exchanges has spurred household investment and by so doing helped to mobilize capital and also mop up excess liquidity. Mutual funds in particular have helped retail investors to invest on a regular basis in equities and by so doing build capital over the long-tern to finance needs such as a child's education, a house or even retirement. The emergence of the stock

exchange has also helped investors to diversify their investment risk because of the availability of a wider choice of investment routes. These opportunities are available today in many countries because of improved liquidity of capital markets, which has been made possible by the emergence of the stock exchange.

It can be safely stated that Pakistan could not have confidently trod the path of accelerated development without a developed capital market and for that matter a vibrant stock exchange. But it is important to observe that a country's exposure to global financial risk increases when its capital market is large and highly controlled by foreign capital. Every good thing has a price.

6.3.1.6 AVERAGE DAILY TURNOVER

Average daily turnover percentage also shows increasing trends in all stock exchanges i.e. KSE, LSE and ISE. This growth in turnover brings the much needed liquidity. It again makes the market more attractive, both for domestic and foreign investors. The importance here is to look at the quality of this turn-over. At this point in time, quality of turn-over is mainly jobbing which is not a healthy trend. It has to be order driven. Concentration of market driven firm investors is another concern.

6.3.1.7 AVERAGE DAILY VALUE TRADED

Average daily value traded has gone up and practically every where in the world where capital market has developed, the market participants and the members make money, because if they make money they expand and further deepen the capital market. So it is imperative that all the policies are directed towards this and that they are allowed to grow. There are different growth strategies that one can talk about. One is the opening of the stock exchanges, the other is allowing the existing member to branch out, the third is opening up the sub-brokerage hoses. Each strategy has to be properly looked at and one

must have justified criteria, if one is to develop further stock exchanges. Especially so when companies listed on the three stock exchanges are same.

6.3.1.8 MEGA PROJECTS

Pakistan stock market has seen a new concept which was previously unknown, and that is of mega-projects. PTC, Hub-Power, Faisal Bank and Lucky Cement are examples. This advent of mega-projects has lot of implications

1. It has increased the liquidity aspect which was problem at LSE and ISE and was the problem of international :investors. Now there are 4 to 5 companies which are practically dominating the turnover at three stock exchanges. This is however, not a negative trend and had to happen out of necessity.

2. Another implication of these mega-projects is that companies with smaller floats will practically dry-out, and our stock exchanges would be operating basically with the four or five companies of bigger floats. One must classify the shares according to the activity and size; that is imperative. That more time should be given to these shares and at the same time, they should be more closely monitored. Consider the example of London Stock Exchange where they have classification of shares in Alpha, Beta and Gamma, which is actually the classification of shares according to the activity and size.

3. These mega projects have contributed a lot towards increasing the saving rates, because the way they were advertised, has its implications. And also because the costs associated with relative size of the projects are small.

4. This experience can act as a progressor for our stock exchanges to become international in the sense of offering service to countries like Central Asian states, where capital markets do not exist.

Thus these mega projects by stock market have ultimately proven to be very successful for our economy as a whole.

6.3.1.9 CROSS BORDER LISTING AND FLOATATION

Cross-border listing, like PTCL, global depository receipts and offering outside Japan in recent time, to the extent that it has introduced Pakistan to the international investors which were not known before. But there are lessons to be learnt from this. In India, for example, there are about 55 such instruments, GDR's convertible bonds and other issues with no feature of convertibility. PTC has a feature of convertibility and an arbitrage taking place between the International market and our local markets. As a result all the money has been skimmed away. This is something to be looked at and to decide whether we need this convertibility feature in international listing or not.

With rising volume, another event that has been observed is that trade between the local stocks exchanges has gone up. Originally this trade was one way, from Islamabad – Lahore to Karachi. But with this liquidity a two way trade is taking place. And again arbitrage is something to be exploited and again another lesson to be learnt is that of barring scandals. It was while arbitrage that was taking place between Tokyo and Singapore, that the crisis happened.

6.3.1.10 DEBT INSTRUMENT

Debt Instrument is a new development to our market. It lowers the cost for the investor, and is a very efficient allocation because it takes away the intermediary, and borrower and lender can interface directly. Stock markets have played a role in this regard.

6.3.1.11 VOLATILITY

Volatility is very common in stock markets. Speculation is not all bad. It plays a very crucial role by providing a liquidity and continuity of prices to the shares. Since speculation has certain advantages, but it has been seen in case of Pakistan stock market that it has been not fully representative of the market volatility.

6.3.2 PAKISTAN STOCK EXCHNAGE: ROLE OF FOREIGN INVESTMENT

The PHENOMENON of foreign investment in general should be seen as another link in the chain of capital exchange relationships which have emerged between the developed and the developing world in the post-decolonization period. The flow of capital from the developed world to the developing one was, to start with, a political need of the capitalist world which was looking for ways and means to curtail the spread of Communism. Therefore, a mechanism of providing grants, aid packages and loans to the third world countries through bilateral agreements or through international institutions, such as the IMF and the World Bank, was evolved to implement the western developmental model in these societies. And this mode of economic transaction among nations is still prevalent, though now it is not pursued with as much enthusiasm as it was done in the bygone days. Moreover, quite often than not, the terms and conditions of such aid packages and loans has also proved to be counterproductive for the recipient economies. This very basis of this model have come under serious questioning and foreign investment, rather than loans and aids, is now considered as a more desirable procedure to muster the capital needed for economic growth in the developing countries. Thus, foreign investment has now become a buzzword and it is generating unprecedented euphoria in the third world - especially in Pakistan.

Broadly speaking foreign investment has two categories: direct investment and indirect investment. While dealing with indirect investment we are invariably referred to the investment which is done through the stock market. Now, for a developing country like Pakistan where capital resources are scarce, foreign investment is almost an ideal mode of accumulation of capital badly required for launching developmental projects in various sectors.

As compared to direct investment in such projects, foreign investment through stocks is regarded safer and often more profitable for the investors. This is so mainly because of two reasons: Firstly, favorable exchange rates, and relative strength of the foreign currency as compared to that of the host country, minimize the risk of their investment s turning bad and this is true for both short term and long term investments. Secondly, the level of control the foreign investors enjoy over their shares investment in particular and

over the trend of a stock exchange in general provides them more room to make appropriate decisions.

While it might be valid justification for such cases, and true that the foreign investors do hold the key to market fluctuations in a stock market like ours which is not only small but also lacks depth, this argument can in no way be employed to undermine the importance Over the last decade or so, there has been a visible shift in the mood of our policy makers who are gradually coming to rely more on foreign investments rather than an aid or loans and a campaign has been launched and pursued by successive government to lure foreign investor in the domestic market. Without going into thee efficacy of this campaign or debating the means adopted to achieve the desired end, it needs be stressed here that we cannot find a better modus operandi for accumulating capital than foreign investment.

It is quite evident that our economy has just started to open up over the last decade or so and our stock exchanges are yet to attain their full potential. We can hope for a far more dynamic equity market once it matures, yet is would be foolhardy to anticipate any complement by deliberate and well formulated policies – not only in the sphere of economic activity but also in the realm of political and social restructuring. It must be kept in mind that a foreign investor does not just dump his capital in the market and stays out in his home town; his capital comes along with whole paraphernalia which warrants some adjustment on the part of both the investor and the host's environs. It goes without saying that security for his life and prosperity is a prerequisite. Furthermore, the problems of lack of an investor-friendly environment in our major urban centers should b addressed in a manner which neither hurts our value systems nor dissuades the investors from bringing in his capital. To state the truth, we do not have an enviable record as far as the law and order problems are concerned and there is a dire need for the government to take stringent and efficient measures to cope with this disturbing situation. The infrastructure that we have to offer to the investors form abroad should also be given a new look. Given the overall level of social and technological development of the society, it is quite understandable that the facilities present at our stock exchanges are quite below the international standard. The exchanges are quite of the stock exchanges should concentrate

on improving the quality of our services so as to bring them at par with those of other exchanges operational in the region.

Conversely, some of the most attractive markets for the foreign investors are to be found in the South East Asia, especially Singapore, Malaysia, Thailand and Hong Kong. Three characteristics of these economies can easily be identified as the pull factors contributing to the growth in size of foreign investment in these markets, i.e. swift and smooth discharge of bureaucratic procedures, a tangible improvement in the civic facilities over the last two decades ranging from the use of state-of-art gadgets in market processes to modernization of traffic systems and last, but not the least, the quality of the social life in which an investor has to consume his leisure hours after a hectic business day. On these counts, in contrast, our country can hardly be considered as a competitive market. Unless we bring about major changes in our attitude regarding these issues, we cannot hope to lure foreign investors.

But probably the most crucial factor which would determine the fate of our foreign investment scenario is the continuity in government policies. Relationship between the two protagonists across the domestic political divide have been sour to the point of no return and political environment in the country is as hostile as ever. Nevertheless, fortunately, the economic policies of both the major parties are remarkably similar. Incentives given to the foreign investor in a number of sectors have persisted despite quick change of hands at the state reins. These factors alone can be considered as a propitious omen for a better future which is in store for our national economy and foreign investor is likely to show more faith in our market.

6.3.3 ANALYSIS THROUGH MONETARY POLICIES:

The impact of monetary and fiscal policies cannot be ignored in stock market analysis. The stock market is not a “cause” of economic growth but it is a reflector of the economic growth. The effects of public policies on economic growth can be measured by the growth of the stock market.

Day to day events and news are reflected in the stock market, some of them may be relevant to the stock market as they indicate the changes in the economic and financial fundamentals. Other may be irrelevant. Although, stock market is often viewed as "informationally efficient", negative events and "bad news" develop their impact consistently faster than positive elements and "good news". Despite this, the fundamental changes in economic structure and policies are more important than the current news. Although, day-to-day fluctuations in stock prices depend on the news largely, the long-term changes in market capitalization are directly related to the fundamental variables. The average prices for one year do not reflect the effects of the news or rumors. They reflect the effects of the economic fundamentals.

The net profit, expectation about future returns, dividend announcements, changes in corporate governance and expected change in the market share of the firm's products are the factors which can affect the market capitalization of a company. At macro level, the magnitude of the investment in equities and market liquidity are more important. So, it is necessary to study the macro economic variables and their relation with the stock market. The effects of economic changes on market capitalization have been tested in the study. The relevant economic factors have been classified in two broad categories:

(1) Demand factors, and
(2) Supply factors.

It is hypothesized that market capitalization depends on the total funds invested in the listed companies' (EQUITIES) and market liquidity (LIQUIDITY) in the long-term.

6.3.3.1 MODEL SPECIFICATION

(A) The funds invested in equities (Supply of shares):

Investment has a direct correlation with change in Gross Domestic Product (GDP). It has been concluded in the finance literature that change in GDP must be reflected in the equities of joint stock companies. Equities appear in balance sheets at historical cost. So, they show the effects of economic growth in real term. Funds in the equity market may

be raised through sponsor's equities, public offerings, right or bonus issues and retained earnings. A higher amount of investment in equities shows a higher amount of available stocks or supply of shares. It is a common view that market capitalization should increase with the growth in equities. The change in equities may be an outcome of higher retention. In this case investment will be raised without additional funding. The same is the case with the issuance of bonus shares. In case of the bonus, the number of shares will increase, but the new funds will not be injected in the market. The addition in the equities through right issues requires additional investment from available funds. The growth of equities therefore increases the market capitalization.

(B) The available funds in the market (Demand for shares):

The change in market capitalization also depends on liquidity in the market. By market liquidity, we mean funds available for investment. The funds may be generated through individual savings, surplus funds available in financial institutions, and inflow of foreign investment. The funds indicate the demand for available stock.

It is notable that liquidity in the market is always created by change in the money supply. Liquidity has been defined in the study, as a residual of the change in money supply after deduction of public borrowing and time deposits. In this way the effects of monetary and fiscal policies can be tested. On the bases of the above discussion we have established the following propositions:

Proposition (I):

"Market Capitalization (MC) is determined by the interaction of the magnitudes of market liquidity (LIQUIDITY) and the listed equities (EQUITIES)".

It is obvious that market liquidity cannot be equal to zero; otherwise market capitalization will also be zero. Similarly a positive value of the listed equities is assumed for a positive market capitalization. So, the model incorporates the condition of zero market capitalization in case of the non-positive equity or liquidity.

Proposition (II):

"The Liquidity-elasticity (□L) and the Equity elasticity (□E) of the Market Capitalization (MC) are constants. So, Market Capitalization (MC) has a double-log (Cobb-Douglous) type of functional form".

According to this proposition, Market Capitalization (MC) will be zero if either equity or market liquidity is zero. So, to incorporate this condition, we adopted the double log form of equation. In the prescribed functional form, if, equity or market liquidity is equal to zero the market capitalization will also be zero. According to the specified model, Market Capitalization (MC) can be written in the following functional form:

MC = f (EQUITY, LIQUIDITY) ---------- (1)

MC = □□EQUITY □1 LIQUIDITY □2 ---------- (2)

Where, '□', '□1' and '□2' are the parameters

VR = MC / EQUITY ---------- (3)

Where, 'VR' is the valuation ratio.

VR = (□□EQUITY □1 LIQUIDITY □2) / EQUITY --(4)

VR = □□EQUITY □1 - 1 LIQUIDITY □2 ---------- (5)

Now, we can establish the following corollaries.

Corollary (1):

"The valuation ratio (VR) will be independent from equities (EQUITIES) if equity-elasticity (□1) is equal to one. In this case the valuation ratio (VR) will not be affected by any change in the equities (EQUITIES). If, equity-elasticity (□1) is less than one, then a positive change in equities (EQUITY) will negatively affect the valuation ratio, and if it

is greater than one, the increase in equities (EQUITIES) will be a cause of a positive change in the valuation ratio (VR)".

Corollary (2):

"The percentage change in Market Capitalization (MC) will be equal to the percentage change in equity (EQUITIES), if equity elasticity (□1) is equal to one. The percentage change in the value (MC) will be less than the percentage change in equities (EQUITIES), if '□1'□□1. Similarly, if equity-elasticity (□1) is greater than one, the percentage change in the market capitalization (MC) will be greater than the percentage change in the equities (EQUITIES)."

Corollary (3):

"Excess market liquidity and a liquidity crunch in the market will not affect the market capitalization (MC), if market liquidity-elasticity (□2) is equal to zero. The percentage change in market capitalization (MC) will be less than the percentage change in market liquidity (LIQUIDITY), if □2□1. Similarly, if liquidity-elasticity (□2) is greater than one, the percentage change in the market capitalization (MC) will be greater than the percentage change in the market liquidity (LIQUIDITY)". (C) The Role of Monetary and Fiscal Policies

For simplification purpose, we divide the sources of market liquidity into two components namely:

1) Supply of Money (M1)

2) Public borrowing by the government and new issue of corporate or government bonds (PDBT).

It is assumed the existence of a public borrowing, which is linked to funds' supply constraints. Public debt (PDBT) is a major cause of decline in the market liquidity. In the estimation of market capitalization, we applied Public Debt (PDBT) as an explanatory variable. The public Debt (PDBT) is directly related with Budget Deficit. The determinants of Budget Deficit have also been shown in figure 2.

It can be concluded that any thing that can change the size of available funds in the market will change market capitalization. The available funds in the market are invested

in equities and risk free debts instruments. Government offers gilt-edged securities, which divert funds from equities to government bonds. The out flow of funds from equity market will be an obvious cause of decline in stock prices. An attractive offer in gilt-edged securities always creates a selling pressure in the equity market. The fiscal deficit of the government is the basic reason for public borrowing.

6.3.3.2 ROLE OF CENTRAL BANK

The central bank of a country also plays an important role in the determination of stock prices (or market capitalization) through change in the money supply. A higher liquidity in the market creates higher demand for shares in the market. Thus, increases market capitalization. Money supply is a liability; it always appeared in the credit side of the central banks' balance sheet. The balance sheet of a central bank shows three major factors of change in money supply. These factors are:

1) Change in foreign exchange reserves and approved stocks of gold and silver.
2) Change in bank credits to private and public sectors (CR).
3) Financing facility to government for budget deficit and commodity operation (UCB).

Any change in the above-mentioned variables, will be a cause of change in the money supply and the change will lead to the change in market capitalization. Inflow of foreign portfolio investment is also considered as an important source of foreign exchange; it is a part of money supply.

6.3.3.3 THE DATA AND ESTIMATION METHODOLOGY

To test the hypotheses an econometric model has been developed. The simultaneity in the model has been shown in figure: 1. The model consists of one behavioral equation and five accounting identities. The six endogenous variables are explained by the accounting identities and the behavioral equation.

1. Budget Deficit (BUDE),
2. Foreign Exchange Reserves (FEX),
3. Banks Credits to Public and Private Sectors (CR),
4. Equities (EQUITIES), External Borrowing, Use of Cash Balance (UCB),
5. Time Deposits (TD) and
6. last year's Money Supply (M2(T-1))

These are the exogenous (or policy) variables. The list of variables has been presented in table: 1. the complete model has been shown by figure: III. The money supply can be estimated by monetary assets (M2). However, Time Deposits (TD) is a part of money supply (M2), which is not available for investment in marketable securities, because commercial banks are not allowed to invest the deposits in the stock market. As a result, time deposits cannot affect the market capitalization. So, it should be excluded from the money supply (M2). So to say, a narrow definition of money supply (M1) should be applied as an explanatory variable.

6.3.3.4 SOURCES OF DATA

The hypothesis has been tested in the context of the Pakistan economy. However, it can be tested in international context. A cross-country comparison will also be appropriate. We adopted a time series approach in the analysis and the annual data is used. The data have been extracted from a variety of sources, covers the period of 2000-2003. Data on market capitalization has been extracted from the 'Balance Sheet Analysis' (SBP). Money supply has been taken from the annual reports of the State Bank of Pakistan. The other macro-economic variables have been extracted from the various issues on Economic Survey (Government of Pakistan). The data on equities have been taken from the annual reports of the Karachi Stock Exchange.

We have 21 observations for each variable. The number of observation is adequate for our analysis, because we are estimating only three parameters. We simulated the data to

measure the prediction power of the model. Ex-anti simulations **3** have also been made for the year of 2001-03.

We applied a double-log functional form to estimate constant elasticity parameters.

After transformation of data into natural logarithms, we tested the co-integration and causality in the model. To test the co-integration among the variables, we applied Johensen's technique. Results of the co-integration tests are shown in table: 3. Nonstationaritym in the individual series is a necessary condition for co-integration among the variables. For this purpose, we applied Augmented Dickey-Fuller (ADF) approach without intercept and trend at the first level lag differences to perform Unit Root Test (URT). The hypothesis of Unit Root has been re-tested through Phillip Person (PP) test. The results of Unit Root Test (URT) are shown in table: 2. Results confirm that the data is applicable for the above-mentioned model and there is no problem of 'Non-stationarity' or 'Unit Root'. Before estimation of the parameters, we tested the causality through Granger's approach. The tests conclude that 'Equity' and 'Liquidity' are Granger causes of Market Capitalization.

The model is valid only for normal changes. The heavy changes in the market capitalization because of the abnormalities have been captured by dummy variables (DUM2 and DUM3). Those dummy variables in the model explain the increasing role of brokerage houses in Pakistan capital market (DUM2) and the adverse effects of conditionalities and sanctions, after nuclear detonation (DUM3).

FIGURE: I
SIMULTANEITY IN THE MODEL
ECONOMIC POLICY IMPACT ON THE STOCK MARKET

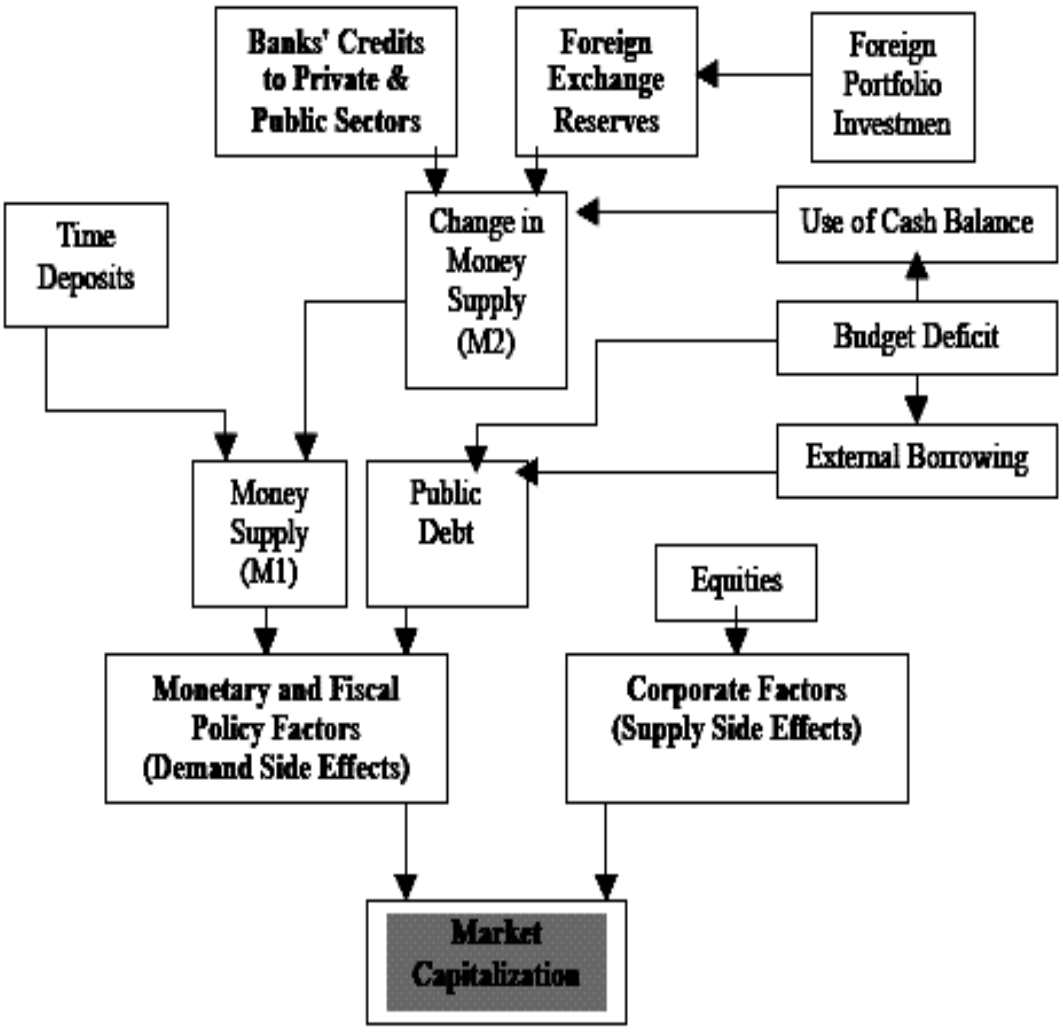


FIGURE: II
PUBLIC FINANCE LINKAGES

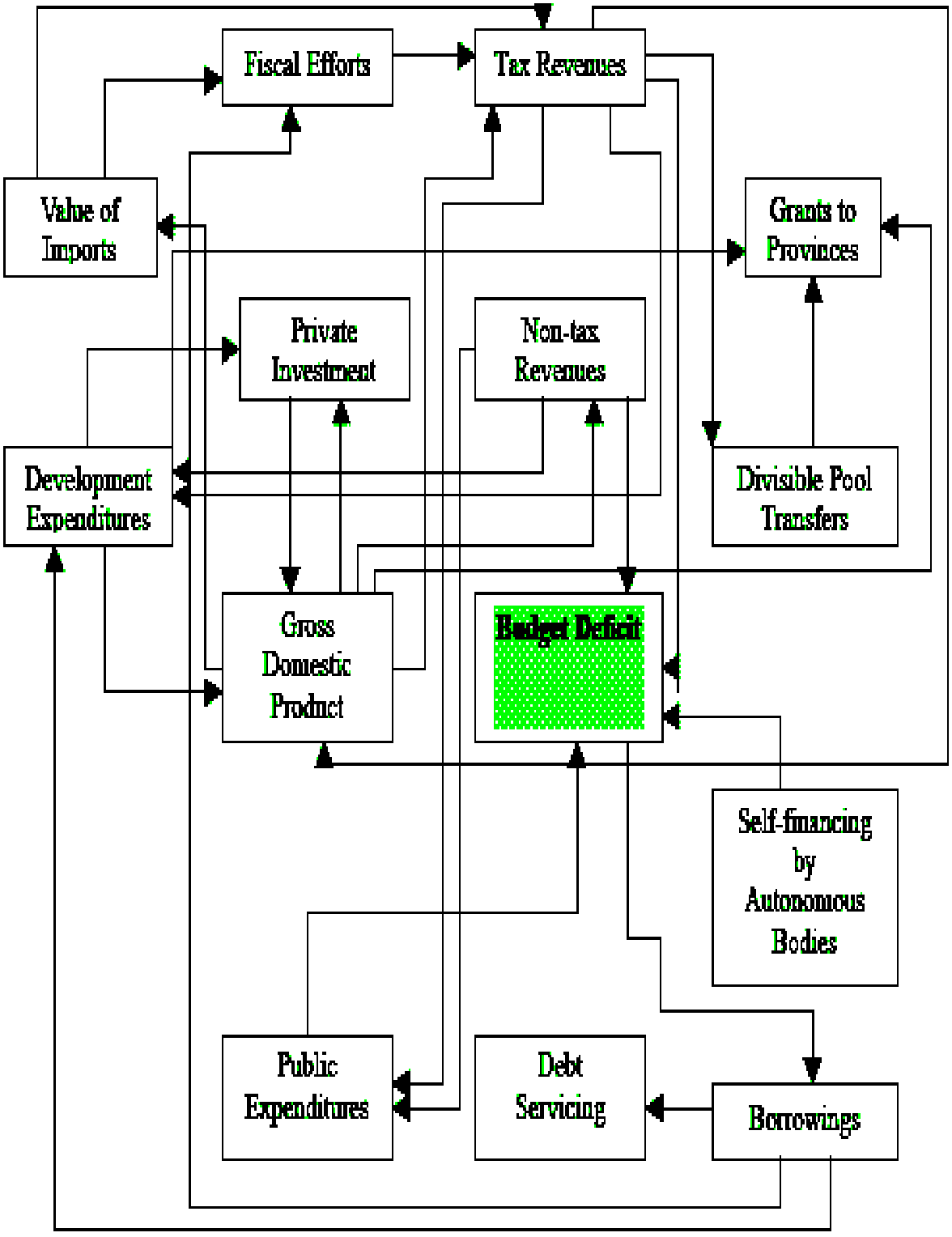


TABLE: 1
DESCRIPTION OF VARIABLES

SR. NO.	VARIABLE	DESCRIPTION
1	ΔM2	Change in money supply/ monetary assets
2	BUDEF	Budget deficit of federal government including expenses on commodity operation
3	CR	Banks' credit to private and public sector
4	DUM2	Dummy variable equal to one for 1993-94, shows the effect of entry of a large number of local and foreign brokerage houses in the Pakistan capital market
5	DUM3	Dummy variable equal to one for 1997-98 and onward, shows the effect of conditionalities and sanctions after nuclear detonation
4	EQUITY	Aggregate equities of the companies listed on Karachi Stock Exchange
5	FEX	Foreign Exchange reserves
6	GEB	Gross external borrowing
7	LIQUIDITY	Money supply (M1) minus public borrowing
8	M1	Money supply = Currency in circulation plus demand deposits
9	M2	Money supply = M1 plus time deposits
10	$M2_{(T-1)}$	One year lagged of M2
11	MC	Aggregate market capitalization
12	PDBT	Domestic borrowing including public accounts[1] (Non-Bank borrowing)
13	TD	Time deposits
14	UCB	Use of cash balance; it includes bank borrowing to finance budget deficit and loans for the commodity operation
15	VR	Valuation Ratio

FIGURE: III
ECONOMETRIC MODEL:
FISCAL AND MONETARY DETERMINANTS OF MARKET CAPITALIZATION

Accounting Identities:

1) $\Delta M2 = UCB + FEX + CR$
2) $M2 = M2_{(T-1)} + \Delta M2$
3) $M1 = M2 - TD$
4) $PDBT = BUDEF - GEB - UCB$
5) $LIQUIDITY = M1 - PDBT$

Behavioral Equations :

6) $MC = \psi 0 + \psi 1 EQUITY + \psi 2\ LIQUIDITY$

Exogenous Variables:

7) BUDEF
8) EQUITIES
9) FEX
10) CR
11) UCB
12) GEB
13) TD
14) $M2_{(T-1)}$

FIGURE: IV
ESTIMATED RESULTS

ln (MC) = -4.646 + 0.555 ln(EQUITIES) + 1.254 ln(LIQUIDITY)
(- 5.024) (2.696) (3.808)

+ 0.809 DUM2 – 0.651 DUM3
(3.436) (-3.655)

Adjusted R-Square = 0.9779
F-Statistics = 222.16

* Figures in parentheses are t-statistics

TABLE: 2
UNIT ROOT TEST (URT)

Variable	Augmented Dickey-Fuller (ADF) Test (Level; Number of lags=1; No intercept; No. trend)	Phillip Person (PP) Test (Level; No intercept; No trend; Truncation lag 2)
ln (MC)	2.007 (5%)	2.255 (5 %)
ln (EQUITY)	2.830 (1%)	5.079 (1%)
ln (LIQUIDITY)	3.386 (1%)	6.456 (1%)
Ln (M1)	3.542 (1 %)	8.267 (1 %)
Figures in parenthesis are level of significance.		

TABLE: 3
JOHENSEN'S CO-INTEGRATION TEST
[Test assumption: Linear deterministic trend; Test allows for quadratic deterministic trend in data: ln(MC), ln(EQUITY), ln(LIQUIDITY)]

Eigenvalue	Likelihood Ratio	Critical Values		Rejected at significant level of:
		5 %	1 %	
0.7971	51.868	34.55	40.49	1%
0.5182	21.565	18.17	23.46	5 %
0.3330	7.693	3.74	6.40	1 %

TABLE: 4
GRANGER CAUSALITY TESTS
(Number of lags: 5)

Null Hypothesis	F-Statistics	Accepted/ Rejected
Equity does not Granger cause of Market capitalization	10.8977	Rejected
Market Capitalization does not Granger cause of Equity	82.0198	Accepted
Liquidity does not Granger cause of Market capitalization	7.8391	Rejected
Market Capitalization does not Granger cause of Liquidity	139.269	Accepted

TABLE: 5
PREDICTIVE POWER OF THE MODEL

INDEX	VALUE
Mean Absolute Error (MAE)	22.34
Root Mean Square Percentage Error (RMSPE)	0.032
Thiel index	0.073

TABLE: 6
POLICY SIMULATION
MARKET CAPITALIZATION IN DIFFERENT SCENARIOS

(Rs/ Billion)

Year	Market Capitalization		Effects of changes in economic and financial conditions			
	Actual	Simulated	10% reduction in public debt	10% increase in money supply	10% increase in equities	* Additional $100 Million injected in capital market
Ex-post (Historical) Simulation [2]						
1999-00	500	463	471	586	488	468
Ex-anti Simulation [3]**						
2000-01	---	581	593	741	613	588
2001-02	---	728	745	934	767	735
2002-03		908	932	1175	957	915

* One time addition of $100 million (Rs.5.8 billion) will affect the market for long term.

** It is assumed that public borrowing will remain constant; and 10 percent growth in the equities and the money supply.

6.3.3.5 THE RESULTS AND THEIR IMPLICATIONS

The estimated parameters with their t-statistics have been shown in figure: IV.
Results show that parameters are significant and have correct signs. The magnitude of adjusted R-square confirms the validity of model.

6.3.3.6 INVESTMENT DECISION BY THE FIRMS AND MARKET LIQUIDITY

We conclude that investment decision by the firms and market liquidity are two important determinants of the stock market. With some qualifications, the results indicate that monetary and fiscal policies affect the market capitalization.
In the context of Pakistan, it has been observed that equity-elasticity is less than one (0.55) and liquidity-elasticity is greater than one (1.25). The results explain why valuation ratios are negatively affected by the increase in equities. The accounting theory will be valid only if equity-elasticity is equal to one. No doubt, equities have a positive correlation with the market capitalization, but the magnitude of equity elasticity shows that marginal change in market capitalization with respect to equities will be less than the change of equities. The effects of change in the equities and market liquidity have been shown in the simulation exercise in table: 7.

6.3.3.7 CHANGE IN THE MARKET CAPITALIZATION

The results provide a logical explanation for change in the market capitalization. To some extent, results contradict the Miller and Modigliani theorem. The model provides adequate explanation for the fluctuations in the value of firm. Unless matching funds are available any raise in equities will be a cause of decline in the valuation ratio. Profits, dividends, positive and negative news, social and political events may affect the market capitalization for a short -term, but the present situation of the stock market in Pakistan

can not be classified as an effect of those short-term events. A continuous long-term decline is indicating the changes in economic fundamentals.

TABLE: 7

SIMULATION ANALYSIS
EFFECTS OF EQUITY AND MARKET LIQUIDITY
ON VALUATION RATIO

YEAR	Market Capitalization	Equities	Market Liquidity	%Change in Market Capitalization	Valuation Ratio
Base Scenario					
1999-00	463	409	637	-	0.73
2000-01	581	488	707	-	0.82
2001-02	728	582	782	-	0.93
2002-03	908	694	862	-	1.05
Equities raised by 10 %; Liquidity Raised by 10 %					
1999-00	550	450	701	18.82	0.78
2000-01	691	537	777	18.82	0.89
2001-02	865	640	860	18.82	1.01
2002-03	1078	764	949	18.82	1.14
Equities raised by 30 %; Liquidity Raised by 10 %					
1999-00	603	532	701	30.36	0.86
2000-01	758	634	777	30.36	0.98
2001-02	949	757	860	30.36	1.10
2002-03	1183	903	949	30.36	1.25
Equities raised by 10 %; Liquidity Raised by 30 %					
1999-00	678	450	828	46.51	0.82
2000-01	852	537	919	46.51	0.93
2001-02	1066	640	1016	46.51	1.05
2002-03	1330	764	1121	46.51	1.19
Equities raised by 30 %; Liquidity Raised by 30 %					
1999-00	744	532	828	60.74	0.90
2000-01	934	634	919	60.74	1.02
2001-02	1170	757	1016	60.74	1.15
2002-03	1459	903	1121	60.74	1.30

6.3.3.8 THE IMPLICATIONS IN THE RESULTS

The results indicate that the effect of macro economic changes (LIQUIDITY) is almost twice of the effect of firm's decision of capitalization (EQUITY). In an economy where valuation ratio is less than one, the growth rate of the capital stock must be compatible with the market liquidity. A rise in equity means the increase in the supply of shares and, in opposition to many accounting models, excess supply of share leads to decrease in market capitalization. Market will be affected in positive way only if Money Supply (M1)

is greater than Public Borrowing. It implies that change in market liquidity should be positive. The factors of money supply are substitute to each other. For example, in the present context, the effects of decrease in foreign investment can be normalized through the expansion in Credit to Private and Public Sectors. Similarly, the Use of Cash Balance is a better option to finance the budget deficit than Public borrowing, from the stock market perspectives.

6.3.3.9 THE SIMULATION ANALYSIS:

In this section, the results of the simulation are examined. Simulations are usually considered an important part of the construction and the validation of a dynamic model. We simulated the model over the period 2000-03 with exogenized the Public borrowing (PDBT), Equities of the Joint Stock Companies (EQUITIES) and Money Supply (M1). In estimation of the endogenous variables, exogenous variables are projected on their historical growth rates. The predictive power of the model, through historical simulations has also been measured. The magnitudes of predictive power have been presented in table.

Mean Average Absolute Error (MAE), Root-Square Percentage Error (RSPE) and Thiel (THEIL) index have also been applied. The parameters show that model can be applied for prediction of the market capitalization. The simulations were designed to show the effects of a single policy measure, under the assumption that all the other policy variables were unchanged. Simulation results for selected variables are presented in table: 6, which we consider particularly interesting in the present context. It is found that market capitalization will be increased only by 5 percent by a 10 percent increase in equities. It will be raised by 27 percent if money supply will be increased by 10 percent. Market capitalization will be increased by 2 percent if public borrowing decreased by 10 percent. Similarly, by inflow of a $100 million in foreign portfolio investment, the market will be improved only by 1 percent.

6.3.4 STOCK MARKETS VERSUS BANKS

Is there an independent link between stock market development and growth, or is stock market liquidity correlated with banking development— and is the latter the financial factor that really spurs economic growth?

Although countries with well-developed banks—as measured by total bank loans to private enterprises as a share of GDP—tend to grow faster than countries with underdeveloped banks, the effects of banks on growth can be separated from those of stock markets.

To evaluate the relationship between stock markets, banks, and growth, we know that Countries with both liquid stock markets and well-developed banks grew much faster than countries with both illiquid markets and underdeveloped banks. Furthermore, greater stock market liquidity is associated with faster future growth no matter what the level of banking development. Similarly, greater banking development implies faster growth no matter what the level of stock market liquidity. Thus, it is not a question of stock market development versus banking development— each, on its own, is a strong predictor of future economic growth.

6.3.4.1 WHY MIGHT STOCK MARKETS AND BANKS BOTH, INDEPENDENTLY OF EACH OTHER, BOOST ECONOMIC GROWTH?

Although the empirical evidence is consistent with the view that stock markets and banks promote economic growth independently of each other, the reasons are not fully understood. Stock markets and banks provide different types of financial services. Stock markets offer opportunities primarily for trading risk and boosting liquidity; in contrast, banks focus on establishing long-term relationships with firms because they seek to acquire information about projects and managers and enhance corporate control. There is, of course, some overlap. Like stock markets, banks help savers diversify risk and provide liquid deposits. Like banks, stock markets may stimulate the acquisition of information

about firms, because investors want to make a profit by identifying undervalued stocks to invest in; stock markets may also help improve corporate governance by simplifying takeovers, providing an incentive to improve managerial competency.

6.3.4.2 IS GREATER STOCK MARKET LIQUIDITY ASSOCIATED WITH MORE OR BETTER INVESTMENT?

However, although liquid equity markets imply more investment, new equity sales are not the only source of finance for this increased investment.

In Pakistan most corporate capital creation is financed by retained earnings and bank loans. Although this phenomenon is not wholly understood, greater stock market liquidity in developing countries like Pakistan is linked to a rise in the amount of capital raised through bonds and bank loans, so that corporate debt-equity ratios rise with market liquidity. Hence Stock markets of Pakistan tend to complement— not replace—bank lending and bond issues.

6.3.5 MARKET MAKERS

In Pakistan it has been analyzed that Stock markets provide a platform for trading to occur between buyers and sellers. A security's price is determined based on the market process. Market makers can provide many different services and facilitate trading. The service provided by market makers depends on the structure of the market. A market maker sometimes acts as a broker in which case his/her role is to bring buyers and sellers together. Another important role of a market maker is to provide liquidity to the market particularly in situations when the market for a stock does not clear automatically at one price. The market maker steps in and supplies securities out of her inventory or buys the stock with her capital in case there is excess supply. Most stocks in emerging markets tend to be thinly traded and lack liquidity, therefore this role of the market maker

becomes even more crucial. Market makers do not themselves determine the trading price.

Market makers need to be compensated for this “dealer” role. When acting as a dealer, the market maker posts a bid and a ask price for each security that he/she wants to trade in. Spread is earned as compensation for providing immediacy and price continuity. This price continuity result in smaller price swings from transaction to transaction and hence lower price volatility. Dealers face three types of costs:

- **Order-Processing Costs:** These include the cost of space, communication, and labor.
- **Risk-Bearing Costs:** By stepping in the market maker they hold an inventory position.
- **Adverse-Information Costs:** Market Makers can be victimized by information traders.

Market makers are required to post continuous two-sided quotes that are firm for the size posted. They should be bound only for the posted size but within this posted size they should not be able to back away. Stock exchanges should make it fairly easy to allow somebody to become a market maker.

6.4 CONCLUSIONS

Stock market of Pakistan has made dramatic progress during the last decade. However, in order to compete in the global economy stock markets must continue to make changes in order to meet the needs of their stakeholders. These stakeholders include investors, issuers, shareholders, member firms, and also governments.

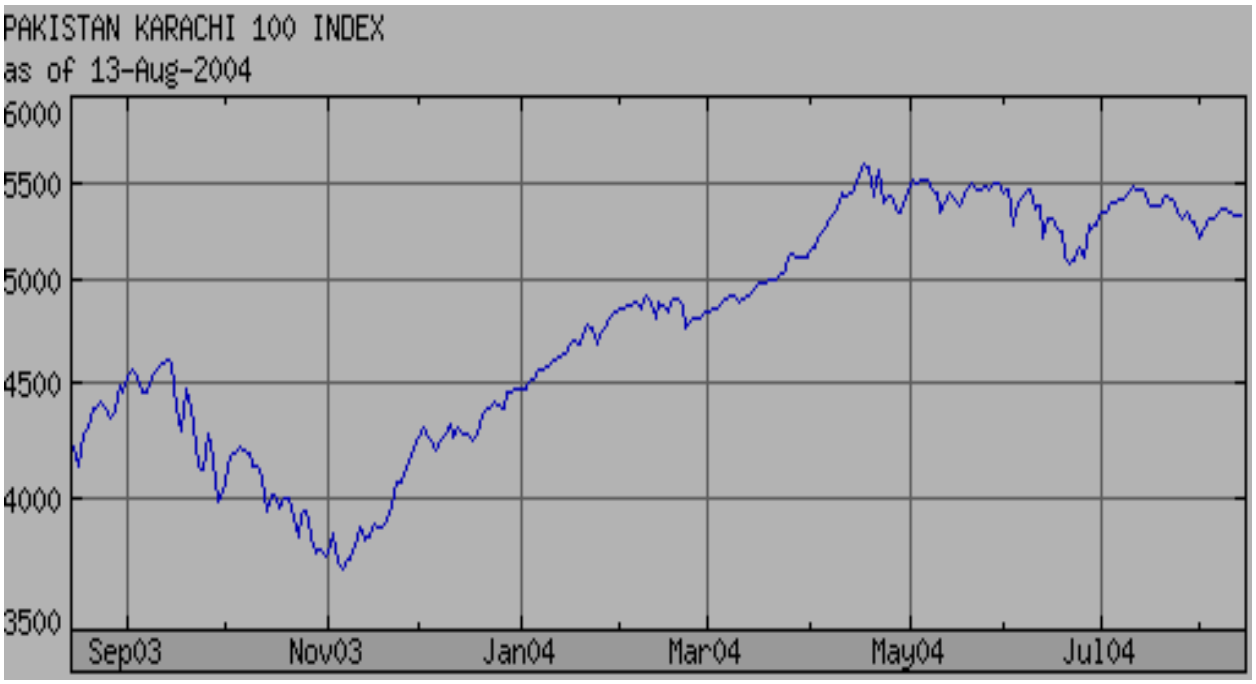
6.5 ANALYSIS OF KSE 100 INDEX

6.5.1 TECHNICAL ANALYSIS

We have learnt by now that technical analysis is truly based on forecasting. The analysts analyze the market condition and then its effects on the stock market with the help of speculations and graphs. Below we can see technical analysis for the local stock exchange i.e. Karachi stock exchange of Pakistan. This technical analysis has been carried out for KSE 100 Index which becomes the representative of the stock market of Pakistan. We can see from the graph that the position of the economy is showing a rising trend in the period march 2003 and May 2004. This rising trend can be attributed to a number of reasons. Firstly, Nov was the period of Government payouts. This is the time when government spends money for the betterment of the economy. This spending can be in the form of industries, other mega projects etc. another reason is the stability of the economy during this period. This stability is due to the sound political and economic activities that have been taking place during this period. We can see rise in GDP in the year 2003-2004. Again the Government was able to reduce debt by paying off the debt with the help of the revenue generation through various sources. Tax collection is another source of fund generation for the purpose of productive spending in terms of road construction, public welfare projects etc.

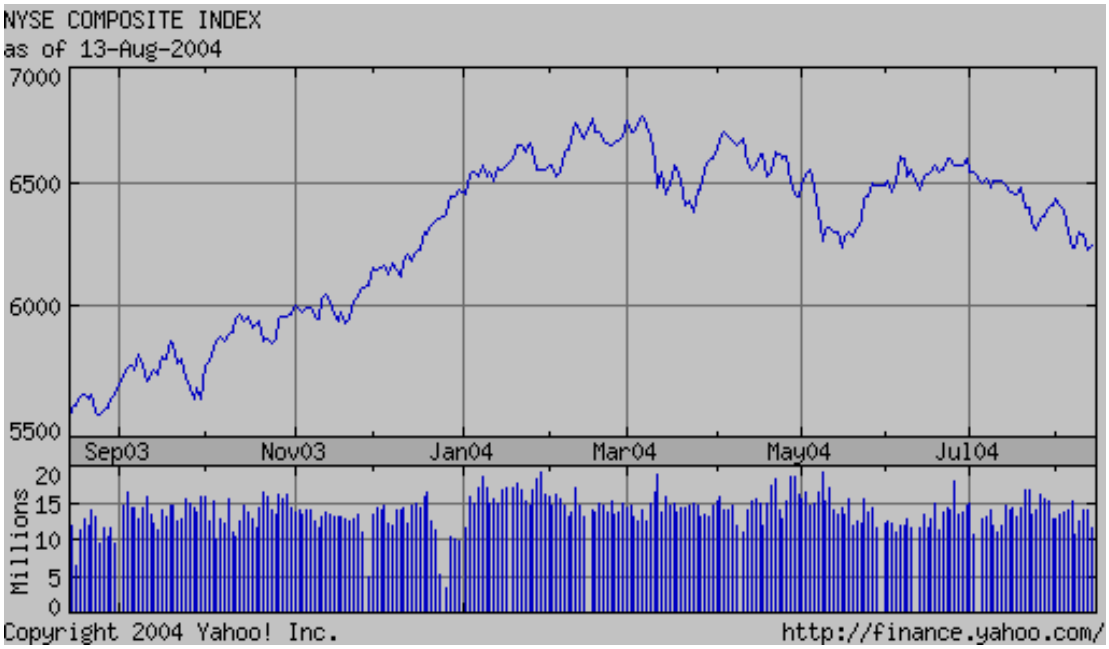
During May to July 2004 we see a falling trend in the economy. This is the period of steam outs when the Government collects money for the purpose of spending.
Continuing this forecasting and estimation and also considering the high and low grid, it is expected that the position of the economy after August would be somewhat around 5000. This is what can be stated with the help of forecasting and speculations but if anything happens in the economy after this period that event will have the direct effect on the graph either positively or negatively.

TECHNICAL ANALYSIS FOR KSE 100 INDEX



Index Value:	**5,335.82**
Trade Time:	Aug 13
Change:	**↑9.66 (0.18%)**
Prev Close:	5,326.16
Open:	5,330.92
Day's Range:	5,318.68 – 5,342.46
52wk Range:	5,008.73 – 5,660.29

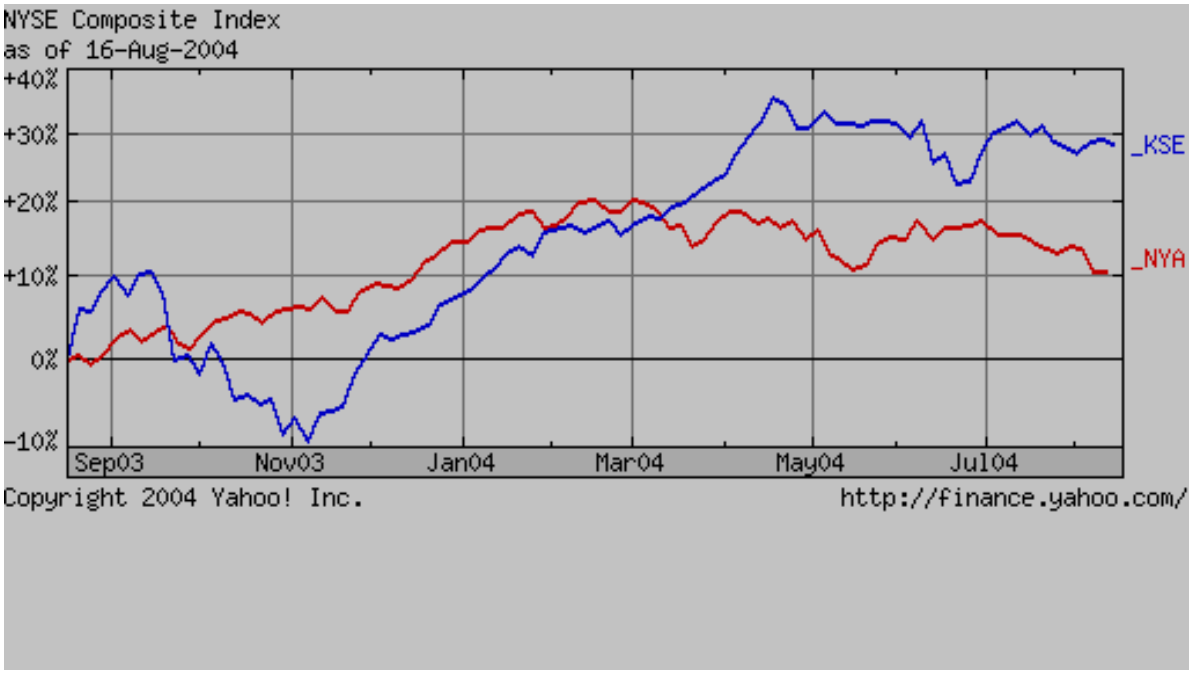
TECHNICAL ANALYSIS FOR NYSE



Index Value:	**6,234.84**
Trade Time:	Aug 13
Change:	**↑17.78 (0.29%)**
Prev Close:	6,217.06
Open:	6,217.06
Day's Range:	6,216.71 – 6,245.75
52wk Range:	5,533.35 – 6,798.12

Above graph shows the technical analysis for NYSE composite Index. The graph is displaying the technical analysis for the respective index. It can be seen that the economy has been improving over the period and the reason can be attributed to the social, political and economic health of the economy. During the period of September the graph is slightly low because we know that at that point of time the economy was adversely affected by the Iraq war and other disputes with Iraq. But after that we can clearly see a rising trend in the economy as predicted with the help of index numbers. The downfall in july can be attributed to the reason that the country is going for the elections for the President.

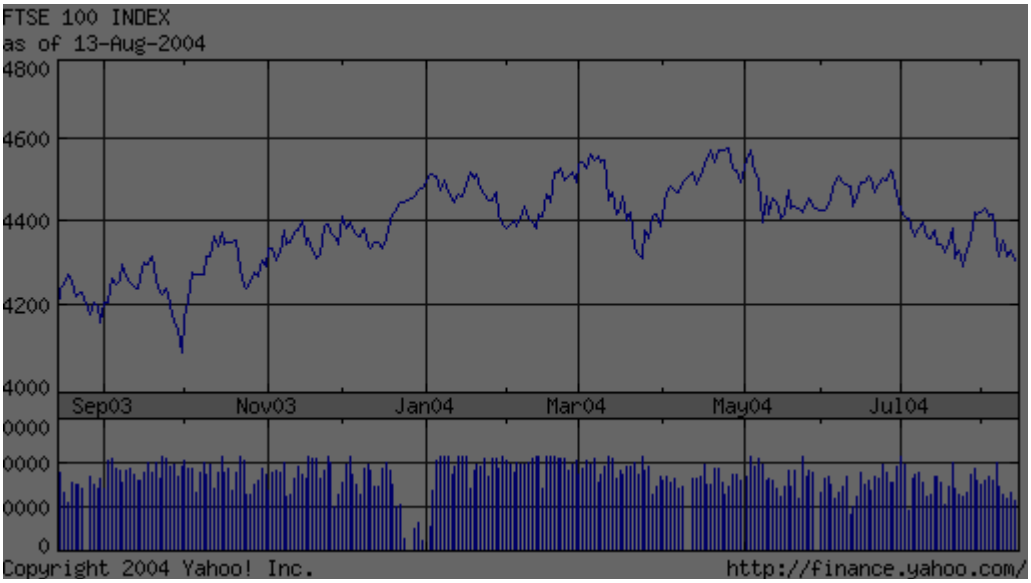
COMPARISON NYSE COMPOSITIE INDEX VS KSE 100 INDEX



Index Value:	**5,377.75**
Trade Time:	10:23AM
Change:	**48.08 (0.90%)**
Prev Close:	5,329.67
Open:	5,321.39
Day's Range:	5,314.03 - 5,382.53
52wk Range:	5,008.73 - 5,660.29

Now, the above graph shows the clear comparison of the two indices of the two different economies. The comparison is given in terms of percentages. We can clearly see that the KSE index is moving along with NYSE Composite Index with slight difference.

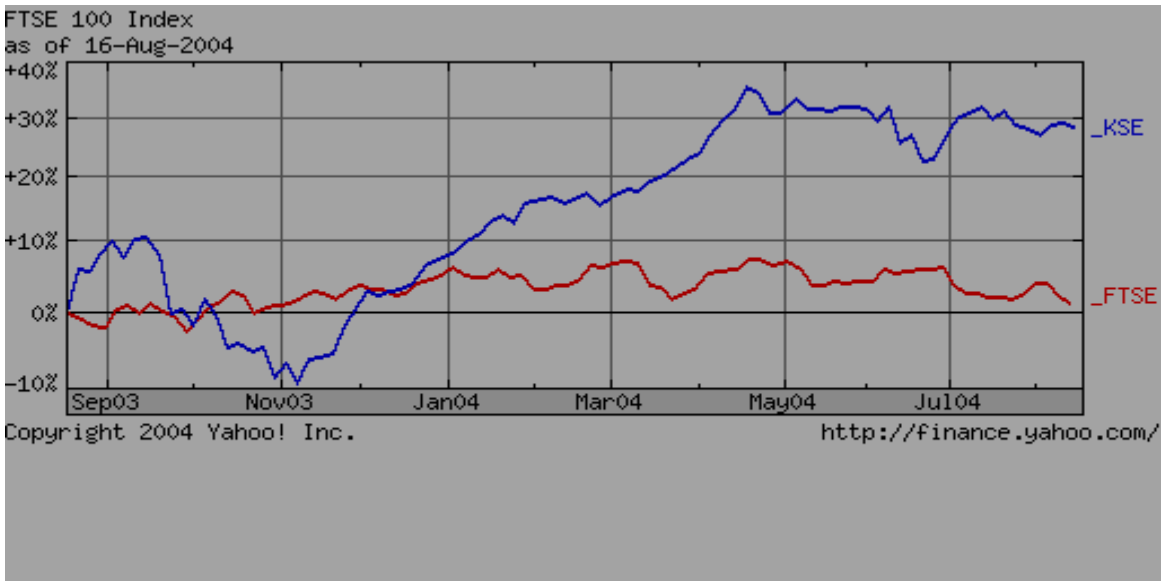
FTSE 100 INDEX OF LONDON STOCK EXCHANGE



Index Value:	**4,313.20**
Trade Time:	9:07AM ET
Change:	**⬆11.70 (0.27%)**
Prev Close:	4,301.50
Open:	4,301.50
Day's Range:	4,283.00 - 4,318.40
52wk Range:	4,283.20 - 4,601.60

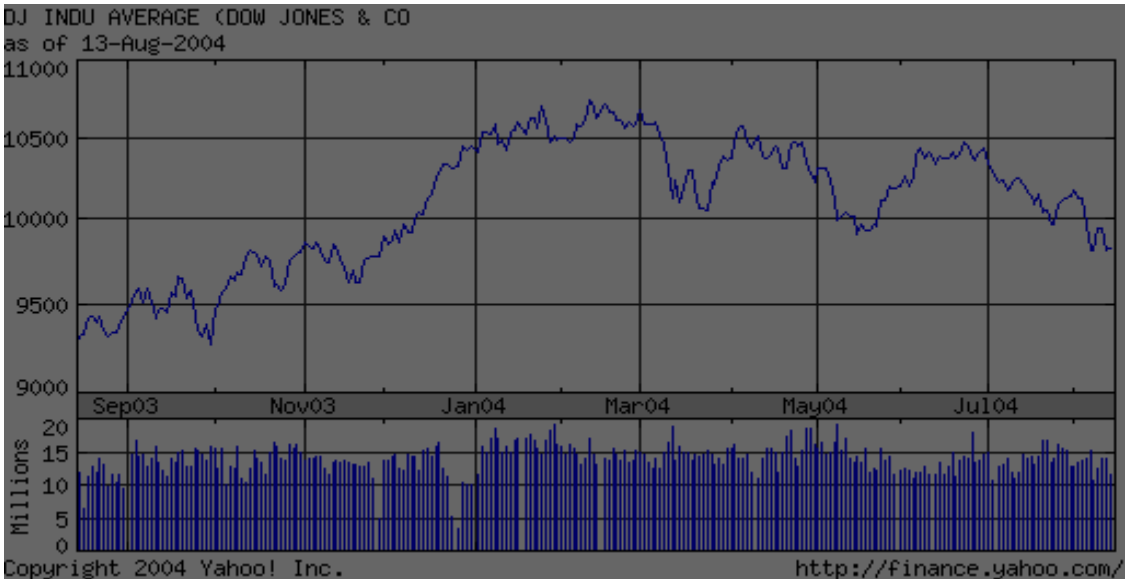
The above graph shows the trend of FTSE 100 Index in the economy of United Kingdom. The trend is somewhat stable indicating the stability of the economy in terms of social, economic and monetary events.

COMPARISON BETWEEN FTSE AND KSE 100 INDEX



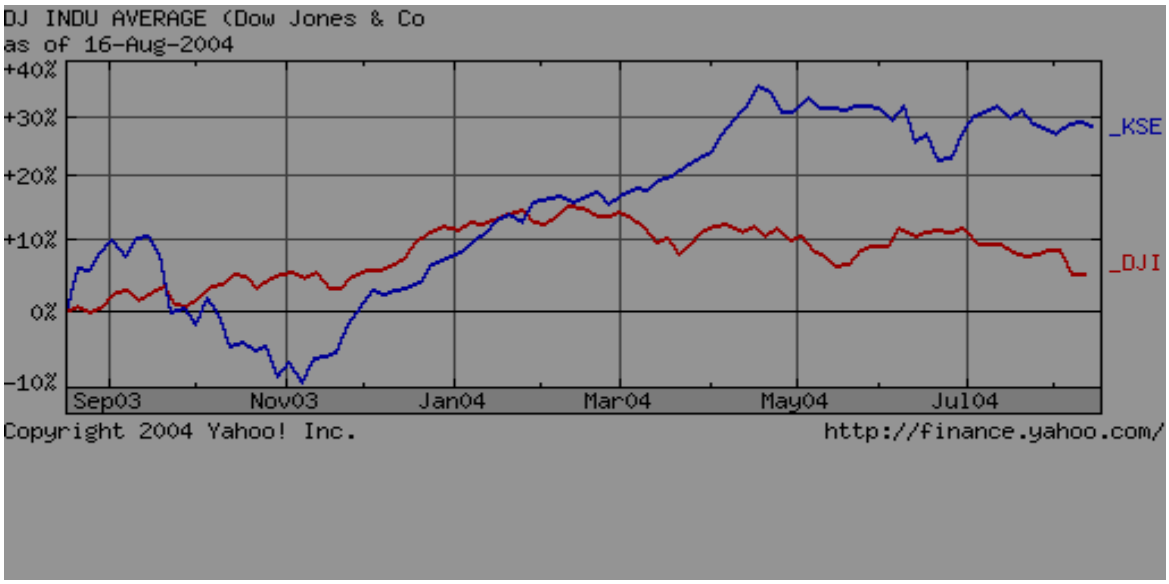
Index Value:	**5,377.75**
Trade Time:	10:23AM
Change:	**↑48.08 (0.90%)**
Prev Close:	5,329.67
Open:	5,321.39
Day's Range:	5,314.03 - 5,382.53
52wk Range:	5,008.73 - 5,660.29

TECHNICAL ANALYSIS FOR DOW JONES INDUSTRIAL AVERAGE



Index Value:	**9,950.19**
Trade Time:	2:56PM ET
Change:	**↑124.84 (1.27%)**
Prev Close:	9,825.35
Open:	9,825.35
Day's Range:	9,825.35 - 9,967.08
52wk Range:	9,218.82 - 10,753.63

COMPARISON BETWEEN DJI AND KSE 100 INDEX



Index Value:	**5,377.75**
Trade Time:	10:23AM
Change:	**48.08 (0.90%)**
Prev Close:	5,329.67
Open:	5,321.39
Day's Range:	5,314.03 - 5,382.53
52wk Range:	5,008.73 - 5,660.29

By looking at the graphs any lay man would say that the Pakistan Economy is in a marvelous position and at times it is above the market leaders. It can be seen also that the technical analysis shows an increasing trend indicating that the economy is in the boom and the people all are very happy with the state of the affairs. But, Alas! That's not the case in reality. Here comes the problem when the index numbers do not show the real position of the economy and just portray the best thing only. By looking at the facts and the figures and the technical analysis for that matter, economy of Pakistan is no doubt one of the best ones in the world. Our stock markets are giving positive results and letting the economy grow. But the debate doesn't end here, if we go into the details of things we will come to know that what actually is happening in the economy. If the economy is progressing then why it is so that the poor remain poor while the rich people are getting even richer?

Whenever any project ahs to take place in the economy Government imposes taxes and the main sufferers of these taxes are the lower middleclass people. They keep on paying the taxes and ultimately do not get what they have been paying for. The major fault with our economy is the unequal distribution of wealth and rights.

Now in order to prove that the stock market operations are not truly representing the economy the major problem has been detected with the KSE 100 Index which according to the assumption is not the true representative of the market and the economy as a whole. This is due to various factors which will be discussed now with the help of facts and figures.

6.5.2 HYPOTHESIS:

If for that matter the KSE 100 index is the representator of the economy than the sector wise percentages of the index weight ages should be equal to the sectoral GDP composition.

6.5.2.1 ANALYSIS OF INDEX NUMBERS

SECTORS	KSE 100 INDEX %	MARKET CAPITALIZATION %	LISTED CAPITAL %	GDP %
Agriculture	**1.11**	**9.54**	**2.54**	**23.3**
Nishar mills	0.48			
Kohinoor Tex.	0.31			
Gadoon Tex.	0.12			
Bannu Woollen	0.02			
Gul Ahmed Tex.	0.18			
Oil & Gas	**30.37**	**2.61**	**5.44**	**3.2**
Oil & Gas Dev.	22.72			
Sui Northern Gas	2.50			
Sui South Gas	1.62			
Pak Oilfields	2.24			
Shell Pakistan	1.05			
Mari Gas	0.24			
Manufacturing	**5.32**	**8.60**	**11.09**	**17.5**
D.G Khan cement	0.76			
Lucky cement	0.76			
Fauji Cement	0.47			
M. Leaf Cement	0.55			
Chakwal Cement	0.39			
Attock Cement	0.27			
Cherat Cement	0.34			
Best Way Cement	0.59			
Pak Suzuki	0.53			
Indus Motors	0.66			
Finance & Insurance	**10.39**	**8.65**	**9.28**	**3.0**

Askari Bank	0.77			
National Bank	2.86			
MCB	1.47			
Bank of Punjab	0.66			
PICIC Bank	0.39			
Faysal Bank	0.94			
Union Bank	0.51			
Meezan Bank	0.18			
Bank Al Habib	0.48			
Soneri Bank	0.32			
Saudi Pak Bank	0.27			
Adamjee Insurance	0.41			
New Jub. Ins.	0.37			
Pak Reinsurance	0.23			
I.G.I Ins.	0.25			
East West Ins.	0.4			
Orix Lease	0.18			

Formula for Calculating Market capitalization:

$$\mathbf{MC_i = \frac{Paid\ up\ Capital \times Rate}{Paid\ up\ value}}$$

$$MC\ \% = \frac{\sum MC_i}{\text{Total MC}}$$

Listed Capital is calculated as the percentage of the total listed Capital.

Total Listed Capital = 378,648.678 m

Total Market Capitalization = 1,437,329,084,372

In the above table index weights of various sectors are compared with:

1. Market Capitalization
2. Listed Capital
3. GDP

IN TERMS OF GDP

AGRICULTURE SECTOR:

The total index weight of agricultural sector is 1.11% whereas the GDP is 23%. Pakistan is an agriculture based country but the maximum of the GDP is allocated to agriculture but when we actually compare it with our index number we find that agricultural sector has been underestimated by the stock exchange and the weight given to this sector is very low. This can be mainly because of illiquid behaviors of the stock exchange and secondly in-proportionate representation of the sector as we have learnt that KSE 100 index takes into account only the top firms.

OIL & GAS SECTOR:

Here we see the opposite case. Oil & gas sector is over estimated by the index and does not represent the true picture of the economy. The GDP of this sector is just 3.2% of the total GDP, where as the percentage calculated with the help of index formula is 35% which is quite high when compared to the real GDP. This shows that the index number gives overestimated figure which makes the economy appear attractive.

MANUFACTURING SECTOR:

Mis-representation is also seen here. The GDP of manufacturing sector is 17.5% whereas the index representation is only 5.39% which is quite low. This means that this sector is not properly and proportionately taken into account which results in its under estimation by the stock exchange.

FINANACE & INSURANCE:

The GDP figure of this sector is 3% and the percentage in terms of index calculation is 10.39%. Here also the index does not give the true picture of this sector instead it is over estimating the sector which does not help the analysts analyze the true state of the economy. Hence the condition of the economy remains almost the same even it is progressing while shown by the stock markets.

6.5.3 FORMULA COMPARISON:

The formulas and computation methods of various top stock exchange indices have been studied in detail which are:

- NYSE Composite Index
- Dow Jones Industrial Average
- FTSE Index UK

And the local index i.e. KSE 100 Index.

6.5.3.1 VALUE INDEX

The index numbers that have been included in the study are all value indices. This can be safely stated because of their computation method. All of them are taking into account number of share and their prices which ultimately calculates the value of shares. So when we compare the KSE 100 Index with the other indices, we find no difference in the type of index.

6.5.3.2 ISSUE OF FLOAT STOCK AND OUTSTANDING STOCK

Float stock is actually total number of shares publicly owned and available for trading. The float is calculated by subtracting restricted shares from outstanding shares. Now, KSE 100 Index is using outstanding share and stock as a whole which includes the restricted shares and the shares held by the public. So here also the problem arises. By considering all the shares and not only the shares that are being traded on the stock market creates the problem of liquidity. By this it is meant that the shares of the company continue lying on the trading board even if they are not being traded and hence they are not liquid as they are not in demand and have zero volume.

For example, a company may have 10 million outstanding shares, but only 7 million are trading on the stock market. So actually the trading stock is 7 million but the stock market is representing the whole 10 million which again gives the untrue picture of the economy.

On the other hand, NYSE composite index, Dow Jones and FTSE use the floating stock which enables them to be the true depicter of the economy.

6.5.3.4 ISSUE OF SECTOR REPRESENTATION

By analyzing the KSE 100 Index it is seen that the index does not represent the various sectors of the economy proportionately. The index composition is such that it takes into account the top 27 companies ignoring the rest. Obviously when only the top leading companies would be taken then the lower end and middle companies would not be showing any contribution in the economy. now if we refer back to the technical analysis portion we will clearly understand this fact of mal-representation by KSE 100 Index. This leads to the negative effect on economy as a whole. Apparently it seems that the economy is growing and is showing an increasing trend as can be seen in technical analysis but if we see realistically this is not the case. The companies that are included in the index composition do not represent the sectors which should be represented by the KSE 100 Index to give the true picture.

On the other hand, if we look at the Dow Jones Index we find a clear difference in the composition of the index. Dow Jones index takes into account various companies giving a true picture of the economy. Similar is the case with FTSE Index and NYSE Composite Index.

If the sectors of the economy are truly represented by the index numbers then they would be giving the true picture of the economy instead of portraying the false picture which appears to be very attractive but in fact it is not.

6.5.3.5 ISSUE OF MARKET REPRESENTATION

When KSE 100 Index is unable to represent the economy as whole then its understood that it is not representing the particular market it trades in. if we take the example of say agriculture market, then in case of KSE 100 Index only the top performing company in that sector would be taken into account and the rest would be ignored. This does not give what actually is happening in the market.

The other economies are progressing in the right manner just because of the reason that they stock market indices do not over or underestimate the index weight age.

Actually, an index is essentially an imaginary portfolio of securities representing a particular market or a portion of it, but what we see in Pakistan that this is not happening.

6.5.3.6 LACK OF REVIEW

It is seen that KSE 100 Index is not reviewed on regular basis. This is also problematic because if it is not reviewed properly and regularly it would not be possible for the analysts to identify any discrepancies at any point of time.

The other indices are properly reviewed on regular basis, this is the reason that they are efficient in their operation.

6.5.4 ISSUE OF LIQUIDITY

Symbol	Volume	Open Rate	High Rate	Low Rate	Current Rate	Price Change	% Change	Index Weightage (%)	Index Points	Outstanding Shares (million)	Market Capt. (million)
Fauji Fert Bin	40,083,000	21.30	22.45	21.15	22.20	0.90	4.23	1.62	3.44	909.90	20199.81
OilandGas Dev.	37,857,800	65.50	66.55	65.20	66.45	0.95	1.45	22.97	17.19	4300.93	285796.69
D.G.K.Cement	14,079,500	56.00	57.25	55.55	57.15	1.15	2.05	0.77	0.81	167.63	9580.08
M.C.B.	10,289,300	54.15	55.35	53.80	55.25	1.10	2.03	1.50	1.56	337.18	18629.20
B.O.Punjab	9,591,500	64.40	66.45	64.15	66.30	1.90	2.95	0.67	1.00	125.52	8321.93
Lucky Cement	9,528,000	38.55	39.25	38.25	39.10	0.55	1.43	0.77	0.57	245.00	9579.50
Fauji Cement	8,498,000	15.85	16.20	15.70	16.10	0.25	1.58	0.48	0.39	370.74	5968.96
National Bank	7,067,000	72.00	73.00	71.75	72.95	0.95	1.32	2.89	1.97	492.41	35921.36
Sui North Gas	6,965,100	62.25	63.50	61.95	63.10	0.85	1.37	2.53	1.78	499.19	31498.67
Askari Bank	5,689,400	76.50	77.60	76.05	77.20	0.70	0.92	0.78	0.37	125.58	9695.15
M.Leaf Cem.	5,662,000	38.10	38.65	37.80	38.55	0.45	1.18	0.56	0.34	180.49	6957.94
P.T.C.L.A	4,921,000	42.35	42.60	42.10	42.35	0.00	0.00	12.84	0.00	3774.00	159828.90
Hub Power	4,246,500	31.20	31.60	31.15	31.50	0.30	0.96	2.93	1.46	1157.15	36450.36
Dewan Motors	3,726,000	25.45	26.80	25.55	25.80	0.35	1.38	0.15	0.11	73.40	1893.80
Sui South Gas	3,384,500	29.80	30.25	29.55	30.10	0.30	1.01	1.62	0.85	671.17	20202.35
Pak Oilfields	3,159,400	211.20	213.50	210.35	213.30	2.10	0.99	2.25	1.16	131.41	28030.69
Nishat Mills	3,089,200	48.10	49.25	47.85	49.15	1.05	2.18	0.48	0.54	122.48	6019.83
Chakwal Cement	2,560,500	8.60	8.95	8.60	8.85	0.25	2.91	0.40	0.59	562.46	4977.74
I.C.I.	2,240,100	84.75	86.25	84.40	85.50	0.75	0.88	0.95	0.44	138.80	11867.60
Dewan Salman	2,093,500	20.45	20.90	20.35	20.75	0.30	1.47	0.57	0.43	340.76	7070.85
P.I.A.C.(A)XD	1,846,000	14.75	15.20	14.50	15.05	0.30	2.03	1.39	1.45	1150.73	17318.53
P.S.O.	1,356,900	256.60	258.40	256.40	257.85	1.25	0.49	3.55	0.90	171.52	44226.33
PICIC Growth Fu	713,500	46.35	46.90	46.20	46.75	0.40	0.86	0.47	0.21	126.00	5890.50
Engro Chem.	646,000	94.85	96.40	94.30	95.50	0.65	0.69	1.17	0.42	152.94	14605.77
Union Bank	640,500	31.85	32.50	31.60	32.20	0.35	1.10	0.52	0.29	200.20	6446.33
PICIC Bank	635,500	35.15	35.70	34.80	35.60	0.45	1.28	0.40	0.26	139.43	4963.53
Adamjee Ins.	628,700	61.90	63.40	61.20	62.75	0.85	1.37	0.42	0.30	82.61	5184.05
K.E.S.C.	623,000	7.65	7.75	7.55	7.70	0.05	0.65	1.40	0.48	2266.22	17449.86
Fauji Fert.SPOT	562,800	129.55	130.25	129.10	129.50	-0.05	-0.04	2.67	-0.05	256.50	33216.22
Pak.PTA Ltd.	437,000	14.70	15.25	14.30	15.00	0.30	2.04	1.83	1.91	1514.21	22713.11
Kohinoor Tex.	354,900	48.50	52.10	48.50	50.15	1.65	3.40	0.32	0.56	80.18	4021.01
P.I.C.I.C.	280,600	81.50	82.25	80.55	81.65	0.15	0.18	1.02	0.10	155.88	12727.39
Southern Elec.	264,000	14.00	14.25	14.05	14.20	0.20	1.43	0.14	0.10	124.25	1764.32
WorldCall Comm	258,000	13.15	13.20	13.00	13.20	0.05	0.38	0.17	0.03	159.28	2102.48

Cherat Cement	170,400	79.50	82.50	77.60	80.25	0.75	0.94	0.34	0.17	53.19	4268.71
Shell Pak	155,000	371.00	398.00	360.00	390.05	19.05	5.13	1.10	2.81	35.07	13677.42
Bosicor Pak	121,000	16.85	17.00	16.70	17.00	0.15	0.89	0.24	0.11	175.05	2975.79
Faysal BankSPOT	96,000	35.70	36.50	34.75	36.40	0.70	1.96	0.85	0.86	291.26	10601.99
Pak Suzuki	95,000	134.60	138.50	134.80	136.00	1.40	1.04	0.54	0.29	49.13	6681.84
Jah.Siddiq.Co	56,400	113.05	111.00	107.40	111.00	-2.05	-1.81	0.31	-0.30	35.00	3885.00
Nishat (Chun)	37,300	61.40	63.25	62.25	62.45	1.05	1.71	0.22	0.20	44.35	2769.78
Indus Motor	28,400	104.00	109.00	103.50	103.50	-0.50	-0.48	0.65	-0.17	78.60	8135.10
P.N.S.C.	27,900	58.35	60.00	58.55	58.55	0.20	0.34	0.54	0.10	114.34	6694.64
Pak Tobacco	26,500	45.90	46.80	46.00	46.00	0.10	0.22	0.94	0.11	255.49	11752.71
Attock Ref.	23,500	90.65	91.95	91.00	91.25	0.60	0.66	0.21	0.07	29.16	2660.85
Meezan Bank	23,500	19.60	19.50	19.10	19.10	-0.50	-2.55	0.18	-0.25	117.04	2235.56
Soneri Bank	19,500	31.35	32.00	31.30	31.60	0.25	0.80	0.32	0.13	127.19	4019.26
General Tyre	13,500	44.00	44.75	44.35	44.50	0.50	1.14	0.21	0.13	59.77	2659.82
Bank AL-Habib	12,500	43.65	44.00	43.60	44.00	0.35	0.80	0.48	0.20	135.25	5951.17
Ibrahim Fib.	11,500	40.60	40.20	40.10	40.10	-0.50	-1.23	1.00	-0.65	310.51	12451.33
Attock Cem	11,400	46.60	48.00	46.50	47.00	0.40	0.86	0.27	0.12	72.16	3391.65
Arif Habib	8,000	704.00	710.00	701.00	710.00	6.00	0.85	0.46	0.20	8.00	5680.00
Saudi Pak Bank	8,000	14.75	15.50	15.00	15.00	0.25	1.69	0.27	0.24	225.00	3375.00
Gadoon Tex.	6,800	64.00	65.05	64.50	65.05	1.05	1.64	0.12	0.10	23.44	1524.61
Kohi.Energy	6,500	32.80	35.00	33.90	34.00	1.20	3.66	0.46	0.86	169.46	5761.59
Pak ReInsurance	4,900	64.70	63.70	63.05	63.25	-1.45	-2.24	0.23	-0.27	45.00	2846.25
Reckit Benc	4,100	93.55	95.00	94.00	94.00	0.45	0.48	0.22	0.06	29.40	2763.86
Sitara Chem.	4,000	95.00	96.50	94.00	95.00	0.00	0.00	0.14	0.00	18.55	1762.60
Atlas Honda	3,800	222.90	222.00	214.00	222.00	-0.90	-0.40	0.36	-0.08	20.44	4536.97
Kohinoor Wea.	3,500	37.50	40.30	38.90	40.30	2.80	7.47	0.10	0.35	30.05	1211.17
GlaxoSmithkline	3,400	211.00	211.95	209.50	211.00	0.00	0.00	1.23	0.00	72.82	15365.01
Clariant PakSPOT	3,200	154.00	156.00	154.00	156.00	2.00	1.30	0.20	0.13	15.60	2433.12
Stand. Chart. M	2,500	35.80	35.25	34.55	35.25	-0.55	-1.54	0.11	-0.09	37.42	1319.13
Honda Atlas	2,100	69.50	70.00	70.00	70.00	0.50	0.72	0.24	0.09	42.00	2940.00
Thal Limited	2,000	87.00	88.00	84.00	85.50	-1.50	-1.72	0.10	-0.09	13.91	1189.58
Abbott Lab.XD	1,500	140.25	140.25	140.00	140.25	0.00	0.00	0.64	0.00	56.66	7945.90
Pak Ref.	1,500	153.00	152.25	151.00	151.00	-2.00	-1.31	0.24	-0.17	20.00	3020.00
Tri-Pack Films	1,500	79.00	78.00	77.00	77.00	-2.00	-2.53	0.19	-0.25	30.00	2310.00
Lakson Tob.	1,000	261.25	261.00	261.00	261.00	-0.25	-0.10	1.08	-0.05	51.32	13393.68
Metro Bank	1,000	48.50	48.50	48.00	48.00	-0.50	-1.03	0.46	-0.25	120.00	5760.00
Orix Leas.	1,000	36.50	38.30	38.30	38.30	1.80	4.93	0.19	0.46	60.42	2313.93
Packages Ltd.	1,000	193.00	193.00	192.50	192.50	-0.50	-0.26	0.74	-0.10	47.54	9150.91
National Ref.	900	199.00	200.00	197.20	197.20	-1.80	-0.90	1.06	-0.50	66.64	13141.17
BOC (Pak)	500	150.50	151.00	150.00	151.00	0.50	0.33	0.30	0.05	25.04	3780.84
Colgate Pal.	500	179.00	184.00	183.90	184.00	5.00	2.79	0.18	0.26	12.23	2250.39

Dawood Her.	500	185.00	185.00	182.15	182.15	-2.85	-1.54	1.05	-0.86	72.06	13125.29
I.G.I.Ins.	200	250.00	245.00	245.00	245.00	-5.00	-2.00	0.24	-0.26	12.28	3008.86
Int.Ind.SPOT	200	225.25	229.50	222.10	222.10	-3.15	-1.40	0.29	-0.22	16.30	3620.41
Mari Gas	200	82.00	82.50	82.50	82.50	0.50	0.61	0.24	0.08	36.75	3031.88
Nestle Milk	200	455.05	455.00	455.00	455.00	-0.05	-0.01	1.66	-0.01	45.27	20599.22
UniLever Pak	120	1505.00	1505.00	1500.00	1505.00	0.00	0.00	1.61	0.00	13.29	20007.29
Bata (Pak)	100	65.00	69.85	69.85	69.80	4.85	7.46	0.04	0.15	7.56	527.69
New Jub.Ins.	100	72.00	74.00	74.00	74.00	2.00	2.78	0.38	0.54	63.69	4712.74
AL-Ghazi TractorSPOT	0	180.00	180.00	180.00	180.00	0.00	0.00	0.56	0.00	39.03	7026.08
Bannu Woollen	0	37.50	37.50	37.50	37.50	0.00	0.00	0.02	0.00	5.07	190.13
Century PaperSPOT	0	85.00	85.00	85.00	85.00	0.00	0.00	0.21	0.00	31.42	2670.81
Dreamworld	0	101.00	101.00	101.00	101.00	0.00	0.00	0.26	0.00	32.00	3232.00
Gatron Ind.	0	143.00	143.00	143.00	143.00	0.00	0.00	0.44	0.00	38.36	5486.12
Ghani Glass	0	75.05	75.05	75.05	75.05	0.00	0.00	0.15	0.00	24.17	1813.70
Gul Ahmed Tex.	0	65.95	65.95	65.95	65.95	0.00	0.00	0.18	0.00	34.07	2247.13
Millat Tractors	0	290.00	290.00	290.00	290.00	0.00	0.00	0.19	0.00	8.01	2322.73
Rafhan Best	0	298.00	298.00	298.00	298.00	0.00	0.00	0.15	0.00	6.16	1834.96
Rafhan MaizeSPOT	0	570.00	570.00	570.00	570.00	0.00	0.00	0.42	0.00	9.24	5264.75
Security PaperSPOT	0	132.00	132.00	132.00	132.00	0.00	0.00	0.23	0.00	21.98	2901.60
Wazir Ali	0	28.00	28.00	28.00	28.00	0.00	0.00	0.02	0.00	7.61	212.96
Bestway Cement	0	38.00	38.00	38.00	38.00	0.00	0.00	0.59	0.00	193.47	7351.84
East West Ins.	0	39.31	39.31	39.31	39.31	0.00	0.00	0.04	0.00	12.30	483.44
Pak.Services	0	1.15	1.15	1.15	1.15	0.00	0.00	0.00	0.00	32.52	37.43
Shahtaj Sug.	0	22.15	22.15	22.15	22.15	0.00	0.00	0.02	0.00	12.01	266.05
Siemens Engg.	0	34.60	34.60	34.60	34.60	0.00	0.00	0.02	0.00	7.77	268.86

One of the major functions of the stock market is to provide liquidity to the investors and other wise to enhance their wealth. After thoroughly analyzing the operations at stock exchange and the working of the index numbers it can be safely stated that the stock market of Pakistan does take in to account the concept of liquidity.
Above is the KSE 100 Companies table that is traded on daily basis. The purpose of bringing in here this table is to explain the non availability of liquidity factor in the Stock Exchange.

If we look at the table and see the first company i.e. Fauiji fertilizer Bin. The total volume of shares is 400083000 and the index weight is 1.66%. Whereas Nstle has the total volume as 200 and the index weight is 1.66%. So a clear and marked difference can be seen in the Volume of both the companies but the index weight is same. This is mainly because of the reason that KSE takes into account the outstanding shares including the restricted number of shares. In case of Fauji fertilizer bin the volume or the outstanding share must be bigger as can be seen but the number of shares being actually traded must be lesser resulting the index weight that is 1.66%

CONCLUSION

After analyzing the Stock Market of Pakistan, it can be stated that over the last decade the stock market of Pakistan has emerged as among the good reputed stock markets. The performance of the Karachi Stock Exchange has improved a lot showing a growing trend in the economy as can be seen through findings and analysis of the Stock exchange. But when the index numbers were analyzed and compared with the international indices, although apparently there seems to be no problem but after going into details the fact was revealed that the KSE 100 Index is not the true representative of the economy. This has been concluded after thorough analysis of the KSE 100 Index and its comparison with world leading indices to find the gap.

RECOMMENDATIONS

- First of all it is recommended that KSE 100 Index should bench mark the world leading Dow Jones Industrial Average (DJIA). It is seen that DJIA is performing tremendously well because of its composition and the proportionate sector representation.

- KSE 100 Index should take into account the floating stock rather than outstanding stock. This will solve the problem of mis-representation to some extent as the floating stock takes into account only the trading stock not the reserved or the restricted stock or the stock held by the Government.

- One of the major issues in the KSE 100 Index is that of lack of liquidity. This creates many problems for the investors and might take away the investors due to the illiquidity of the stocks. So the KSE has to look into it and cater for the improvement of liquidity.

- Another recommendation is in terms of proper representation of the companies. The KSE 100 Index should not take into account the top notch companies only but should select the companies sector wise with proportionate representation of the sectors. This will help the stock exchange to improve the representation of the market and the economy as a whole.

- It is all the more important for the stock exchange to continually review and revise the index formulation and composition as and when required so that if any problem occurs they would be fully aware of it. For this they should adopt proper regulatory mechanism which would enable them to compete internationally.

- Transparency of trading implies the scope and up datedness of available information with regard to executed trading.

- It would also be beneficial for the stock exchange to outsource and form a proper consulting team of analysts and predictors who would be experts. This will allow the stock exchange to properly predict and forecast the economic, social and political condition of the economy directly affecting the stock market and for that matter the investors. The following framework will help the stock exchange in this regard.