

# **BASICS OF CAPITAL MARKET INVESTING**

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## **BASICS OF CAPITAL MARKET INVESTING**

This booklet is intended for those who are not familiar with the intricacies of investing in the capital markets. We hope that after reading this, some of the hi-finance terminology will become somewhat demystified. Our emphasis will be in pointing out the varying levels of risks that are involved and how an investor should weigh his or her options to achieve a realistic rate of return. The markets can move both ways, up and down, but an average investor is more sensitive to the risk of loss of capital and we therefore give more attention to this fact.

### **WHAT ARE CAPITAL MARKETS?**

In order to understand this term, it is necessary to define the broad categories of investments:

#### **Forms of investment**

Investments can be in various forms, some of these are: real estate, business enterprises, precious metals and stones, valuable works of art, financial investments etc. Some forms of investment may have a non-financial reward too, such as aesthetic or emotional pleasure from works of art, jewellery, house property etc., but in most cases we strive to at least retain the purchasing power of our savings (i.e. beat inflation) and preferably come out ahead.

#### **Financial Investments**

As opposed to physical assets, financial investments are generally a right or an entitlement to receive money (or streams of money). The Financial investments themselves are in two broad categories – direct investments, that we hand over to an obligor (the party that uses our money) and get back our entitlement (dividends, interest, principal etc.) from the obligor (Examples are bank deposits and investments in the National Savings Schemes) and market-based investments that we (normally but not always) take over from some other investor; and when we want to encash our investment, we find someone in the market to take over our investment from us. (Examples are shares of companies, bonds issued by companies called TFCs in our market) or tradable bonds issued by the government, etc. Financial investments are normally represented by certificates, generally referred to as “securities”. However, there is a trend to convert securities into a paperless (electronic) form, which is kept track of, by a custodian such as the Central Depository Company (CDC). The essential attribute of a market-based tradable investment is that one can sell the investment and get cash for it.

#### **Capital Markets**

This is the market place where financial investments (normally of a long-term nature) can be acquired or disposed off. The term is used in the plural to signify separate market segments for various types of financial investments. The stock exchange (also referred to as the stock market) is where shares and bonds issued by business entities (companies) are traded. There is sub-category called the Money Market, which is normally the market for acquiring or disposing off very short-term financial investments but will include inter-bank placement of very short-term deposits and dealings in currencies too.

#### **Equity Vs Debt**

When we invest money with a business entity, it can either be in the capacity of becoming a partner in the business or we can lend money to the business entity for a defined time period.

#### **Equity**

In the first capacity, we participate in the ownership of the business and have an equitable right (legally enforceable right) in the business, to the extent of our share in it. Thus we become an “equity” or “share” holder – both terms are synonymous in the investment parlance. As an equity investor, we are entitled to

distribution of profits and in the event the business is liquidated at some stage, we are entitled to our share of the net assets left over.

## **Debt**

In this case we have a debt that we have to recover from the business in accordance with an agreed repayment schedule and we are entitled to compensation for the use of our money (interest, by whatever name called). The money we invest with government and banks is also in the category of debt. From the point of view of the borrowing entity, we are a creditor and we rank senior to equity in the event of liquidation i.e. creditors will be paid off first and whatever is left over after that will go to the equity holders (owners).

## **UNDERSTANDING DEBT INVESTMENTS**

As has been explained earlier, we pay out certain monies now and expect to get back some interest and the principal later. The factors that impact this type of investment are two types of risk:

### **Risk to Principal**

First and foremost, the risk to the principal is affected by the reliability of the borrower. The government is considered a safe borrower i.e. we do not expect it to default. We normally also place a fair amount of reliance on banks and expect that they have a low likelihood of default. In the case of other businesses, we place reliance on the specific business entity depending on who is running the business and what type of business it is. This is also referred to as “credit risk.”

### **Inflation Risk**

The second type of risk is the underlying inflation rate – we clearly want an interest rate that will not fall short of the inflation rate during the period of the investment. Otherwise we will not retain the purchasing power of our principal. For example, if we invest Rs. 100,000 for a year at an interest rate of 4% and during this period the inflation rate turns out at 5%, we will need Rs. 105,000 to purchase something that cost Rs. 100,000 a year ago but we will only have Rs. 104,000 from our investment i.e., we would have suffered a loss in our purchasing power by the end of the year. This is also referred to as “interest rate risk”.

### **Valuing Debt Securities**

In relation to the capital markets, our concern is with understanding the risk and reward of a debt security and as to how the market puts a value to it. This becomes important for us when we want to buy a security from the market or when we wish to sell it. We must remember that the market functions on the basis of demand and supply. There will be demand for debt securities in general, based on the investible surplus available with investors and for a debt security in particular based on its riskiness and the rate of return in relation to the expected inflation rate. The supply of debt securities comes from borrowers needing the funds. The impact of riskiness and inflation are discussed in the following paragraphs.

### **Interest Rate Vs Inflation Rate**

The interest rate that a borrower has to pay will normally have to be in excess of the expected inflation rate. Please note that whereas the interest rate has to be agreed at the time of borrowing, the inflation rate for the borrowing period can only be guessed. This in itself generates a new risk; the longer the period of borrowing, the riskier it is to guess the inflation rate.

### **The Benchmark Rate**

As was stated earlier, the government is considered a “safe” borrower and it is the interest rate the government has to pay that is used as the benchmark for other borrowers. The government is considered to

have “zero” risk (of default) and should be able to attract debt at an interest rate slightly over the expected inflation rate. As has also been stated earlier, the reliability of the “inflation estimate” diminishes with the length of life of the debt (normally referred to as tenure or tenor of the security). That is, it is more difficult and more risky to predict the direction of economic forces over longer time frames. We therefore find that Treasury Bills (normally up to one-year government bonds) carry the lowest effective interest rate and longer tenor government bonds have to offer a higher rate of return. All the commercial borrowers (normally termed as corporate sector) have to offer rates higher than the benchmark for that tenor.

### **Rating of Debt Securities**

The rate (of interest) at which a corporate entity will have to issue its debt securities (bonds) or Term Finance Certificates as we call them in our effort to be Sharia compliant, depends on the riskiness (degree of reliability) of the corporate entity and the likelihood of the entity meeting its obligations over the period of the debt. It would be extremely difficult for us to try and evaluate the riskiness of each corporate entity in relation to the tenor of the debt security being issued by it. To make our lives easier, there are two licensed Rating Agencies operating in Pakistan, which use a standardised method for measuring the riskiness of companies as well as the debt securities they issue. Letters of the alphabet usually denote the ratings. The market then places a premium that an “A-grade” borrower has to pay over a “zero risk” government security of similar life. Similarly, the premium, say, a “B-grade” borrower has to pay as against the “A-grade” borrower. However, as is in the case of estimating inflation, over a period of time the reliability of a borrower (rating) may change due to changes in business conditions or other factors, therefore the longer the life of the debt security, the higher is the premium that the borrower has to pay.

### **Impact of Change in Inflation and Interest Rates**

As has been stated earlier, a debt security is issued with an interest rate above the expected inflation rate. Should for any reason, the inflation rate go up subsequent to the issue, the attractiveness of this security will diminish. The market will therefore no longer be willing to offer the full value of the security. Let us assume that a government security is issued with a face value of Rs. 100,000 and with one-year life, when the inflation rate is expected to be 5.00 % for the ensuing year and we further assume that, in order for it to attract investment, the security has to carry an interest rate of 5.25 %. Assume that for some reason immediately after the issue of the security, the market perception of the expected inflation rate jumps up to 9%, the government will then be able to issue a new security for the same one year with an interest rate of 9.25 %. The first security will lose its attractiveness and we will only be able to sell it if we offer the security at a discount to its face value; so that the new buyer will get the same 9.25% return, as is then expected for government securities. This means the maturity value of the first security, which is Rs. 100,000 plus interest at 5.25%, i.e., a total of Rs. 105,250 a year from now will have to be discounted by 9.25% or it will be worth Rs. 96,339. This is to say that a security that we had bought for Rs. 100,000 is now worth Rs. 96,339; although the government bond remains a government bond and there still is zero risk as to a default by the government, we have lost nearly 4% of the value because of the change in the expected inflation rate. We could of course hold the bond till the end of the year and get the Rs. 100,000 plus Rs. 5,250 in interest but both these amounts together (Rs. 105,250) will be beaten by inflation. Our target purchasing power needs to be Rs. 100,000 plus 9% inflation or a total of Rs. 109,000. The point here is that even investing in a government bond is not risk-free. However, in the event the inflation and the interest rates drop after we have purchased the security, the converse will be true and we will get a higher market value for the security.

### **Default Risk**

The degree of reliability or the riskiness of the issuer of the bond defaulting is measured by the rating given to the issuer and the bond itself. In the case of the government, we take the default risk to be Zero. This is so because, the government can print currency and still meet its obligations. The fact that the currency may lose

its worth is already discussed in the previous paragraph. Although this does not hold true if the government issues a foreign currency bond. For example, Pakistan has the unfortunate record of having defaulted on its Dollar denominated bonds; these bonds were subject to a default risk as our government cannot print foreign currency. After the imposition of sanctions on Pakistan in 1998 and in view of the then impending default, the bonds were being traded at a sharp discount to their face value. The bonds issued by the corporate sector too are risk prone. However, due to strict regulatory and listing requirements, normally bonds with good ratings come to the market. The rating is assessed each year during the life of the bond and if circumstances so demand, a rating agency can also come out with an unscheduled rating revision. The point to remember is that any businesses can run into trouble anytime and a likelihood of default can emerge during the life cycle of the bond.

### **Zero Coupon Bonds**

Normally, bonds are issued with coupons attached to them. These coupons are detached and used for claiming interest payments. Certain bonds are issued without the feature of regular interest payments (these are referred to as “zero coupon” bonds). The maturity value of such a bond is higher than the value at which it is issued; the difference represents the interest that the investor will earn over the life of the bond. Defence Savings Certificates (DSCs) are an example of such bonds. If you buy a Rs. 100,000 certificate today, you will get Rs 226,098 ten years from now. The Rs. 126,098 extra represents interest at an annually compounded rate of approximately 8.50%. It is not 12.61% per year as many people mistakenly calculate, as you are not receiving Rs.12, 609 every year but Rs. 126,098 after ten years. However, it may not be easy for some people to work out the interest rate. We have therefore done two calculations as ready-reckoners for your convenience – If we assume an inflation rate of 5% per annum for the next ten years, our Rs. 100,000 needs to grow to Rs. 162,889 in ten years to retain our purchasing power. But if we are faced with an inflation rate of 9.00% per annum (which is more than our return of 8.5%), the Rs. 100,000 must grow to Rs. 236,736 in ten years to retain the purchasing power. One will note that the DSCs will come out well ahead of 5% inflation but not of 9.00%. Once, someone has acquired a DSC, one can only hope that inflation remains below 8.50% for the next ten years. DSCs are not traded bonds but the example has been given, as most readers would be familiar with DSCs. Please note that we have not taken into account the impact of income tax, which will impact (negatively) the return earned and must be accounted for while taking investment decisions.

### **Treasury Bills**

Government Treasury Bills (Short-term bonds) are also Zero Coupon Bonds. These are redeemed at face value on maturity and are issued at a discount so as to result in the desired rate of return. For example, a T-Bill of Rs. 1,000,000 of six months maturity may be issued against a payment of Rs. 991,757; the Rs 8,243 that will be earned on redeeming at maturity represents a gain of 0.83% on the investment of Rs. 991,757 for six months or an effective interest rate of approximately 1.67% on an annualised basis. Banks and fund management institutions typically invest in treasury bills. Because of their short life and being government obligations these are relatively low risk investments.

### **Riskiness of Debt Securities (Bonds, TFCs etc.)**

We have already explained the impact of change in inflation and interest rates on debt securities. We have explained that if the inflation and interest rates go up, an existing debt security will lose its attractiveness. However the degree of loss in value will depend on two factors: (a) the length of the remaining life of the security and (b) the coupon (interest) rate it carries. If the inflation rate, and consequently the interest rates go up after we have acquired a debt security, we expect to suffer a loss because we will be earning less than the new, higher interest rate; and the longer the remaining life of our security, the longer (more) we will

suffer; similarly the lower our interest (coupon) rate as compared with the new rate, the higher will be our loss.

### **Rate of return on Debt Securities Versus Equity**

Any business entity that borrows money will do so if it expects to employ the borrowed funds more profitably than the interest rate it will have to pay to the lender. It follows that the interest rate will normally be less than what an owner of the business (equity investor) earns. It should also be noted that the debt security holder is paid interest whether or not the business entity earns profits. But on the other hand, if there is a bumper profit, the debt security holder will only get the already agreed interest and not any more. As has been pointed out earlier, government bonds pay less than similar life corporate entity bonds. It therefore means that the rate of earning on government bonds will normally be much lower than earnings of a business entity (equity investors).

### **Money Market Investments**

As was stated in the earlier part of the booklet, Money Market transactions are primarily those interest-based transactions that have relatively short maturities. Normally we consider transactions to fall in this category if their tenor is one year or less. Treasury Bills fall under this category, so do short-term Certificates of Deposit (short-term Certificates of Investment as these are also referred to). As has been explained earlier, the riskiness of a debt security increases with the length of its remaining life. It would therefore follow that money market investments are less risky. This is generally true, however, because of the lower risk, such investments offer a lower premium over the inflation rate. Therefore we would be giving up on the potential reward for reducing the potential risk. It is also important to understand that a short dated investment will come up for reinvestment frequently and we cannot be sure if one will get a good investment opportunity on each such occasion.

## **FACTORS AFFECTING EXCHANGE RATES**

### **Interest Rates**

We normally notice that strong currencies offer lower interest rates as compared to the Rupee. The reason is simple; the expected inflation rate (expected loss in purchasing power) is higher for Pakistan and lower for the countries with stronger economies. Interest rates are set to, at least, compensate for the inflation rates. With the interest rate compensated, we should be indifferent to which currency we keep our money in, as the respective interest rates on the currencies should compensate us for loss in the purchasing power caused by inflation. But as we know, people prefer to keep their money in different currencies at different times (the US Dollar was a preferred currency till recent times) – the reason being that the market participants try to forecast the future state of the economic conditions in various countries and try and balance out the risk of loss in value versus the compensation from the interest rate. This phenomenon results in varying levels of supply and demand for a currency and is explained in the following paragraph.

### **Supply and Demand**

There are various theories that attempt to explain exchange rates. One is that the exchange rate between two currencies should be determined by what is called “Purchasing Power Parity”. The theory is explained through an example - if we can buy something in the United States for \$1,000 and the exchange rate with the Rupee is Rs. 58 per Dollar, then we should be able to buy the identical item for Rs. 58,000 in Pakistan. However, we know that this is not necessarily the case. Even within a country or one city, price differences do exist. Even if we start off with the prices being identical in two different countries, the supply and demand of the currencies may alter the exchange rate after some time. Currency markets work on supply and demand, e.g. we have observed historically that when large import bills (e.g. for oil imports) have to be

settled, the demand for Dollars goes up and results in the price (rate) of Dollar going up versus the Rupee. The State Bank buys and sells Dollars in the market to try and influence supply and demand of Dollars so as to keep the exchange rate at a desired level. Exchange rates can also undergo sudden changes due to news driven shift in supply and demand - this could be as a result of the receipt of some new information in the market, which alters the previous expectation of the inflation rate forecasts. For example, a war threat is likely to result in an economic burden (inflation) on a country thereby driving down the demand for its currency and thus its value.

## **EQUITY INVESTMENTS**

### **Investing in Business not Speculating in the Market**

We would first urge the readers to always remember that investing in the equity (shares) of a company should be understood as becoming a partner in the business. It must not be seen as taking a punt in the market with the expectation of making a killing. You may get lucky sometime but, on an average, you cannot expect to do better (get better returns) than the business of the company you invest in.

### **Brokers**

Brokers who give you advice to buy and sell shares make money (brokerage commission) each time you buy or sell. A good broker will want your long-term custom and will try to advise you on proper investing. But a broker, who offers hot tips, should, if he is so sure of the tips, use these exclusively for himself and make more money than he would by spreading the news around to his clients and earn only commission from them.

### **Who runs the Business**

One should become a partner in a business if, first and foremost, one is happy with the managing partners of the business. Who are the Directors of the Company, are they known in the market place, what sort of reputation do they have, do they have a track record of running successful businesses? Are they known to be fair to the ordinary shareholders? Do they have a good dividend paying record? Please note that although you have a vote attached to each share you own, it is most unlikely that you have any real say in the affairs of the company – you are akin to being a silent partner but you don't have to be deaf and blind.

### **Prospects of the Business**

After satisfying yourself with the credentials of who manages the business, you have to look at the future prospects of the business. You want to invest in a business only if you believe it to have good prospects (likelihood to be profitable and have the ability to pay good dividends). There is no easy formula for assessing this - you have to use your common sense and base your judgment on proper verifiable information (such as how its products fare in the market) and not on non-verifiable tips.

### **Share Price and Volatility**

The price of a company's shares in the market should normally be such that it justifies what one is acquiring (expectation of future dividends). In other words, the amount you invest should make sense in the light of the expected future dividends. In practice, market prices are determined taking into the account the earnings of the company and not only the dividends that may be paid out of such earnings. However, market prices are not always justifiable, as has been stated earlier, the price is determined by supply and demand, at times there is a surge in demand and at times a loss of confidence. The price of shares is normally quite volatile. It is no good if you have found a company with excellent management and excellent prospects but for some reason the price of the share has gone up beyond what is justifiable for the potential earnings (dividends) –

**the best company in the world would be a bad buy if bought too expensive.** Apart from the market sentiment, which impacts prices, there will always be general economic conditions and company specific reasons affecting prices. We shall be discussing various methods of trying to place a fair value on shares of a company in the later part of this booklet but at this stage we would like to point out that share prices are volatile and can be a cause of concern for an investor.

### **Risk Taking Capacity**

Given the fact that prices of shares are volatile, you should not invest in shares if you do not have the financial capacity or if by nature you would be too anxious when the prices go down. You have to assess your own nature but we can help you identify your financial risk taking capacity. Business and the economy are cyclical i.e., there are continuous ups and downs in the economy and in every business sector; take for example the cement business. Because of initial shortages of cement, a lot of money was made in the trade, then many factories came up resulting in an oversupply and the factories were in trouble but once again demand has caught up and the business is profitable.

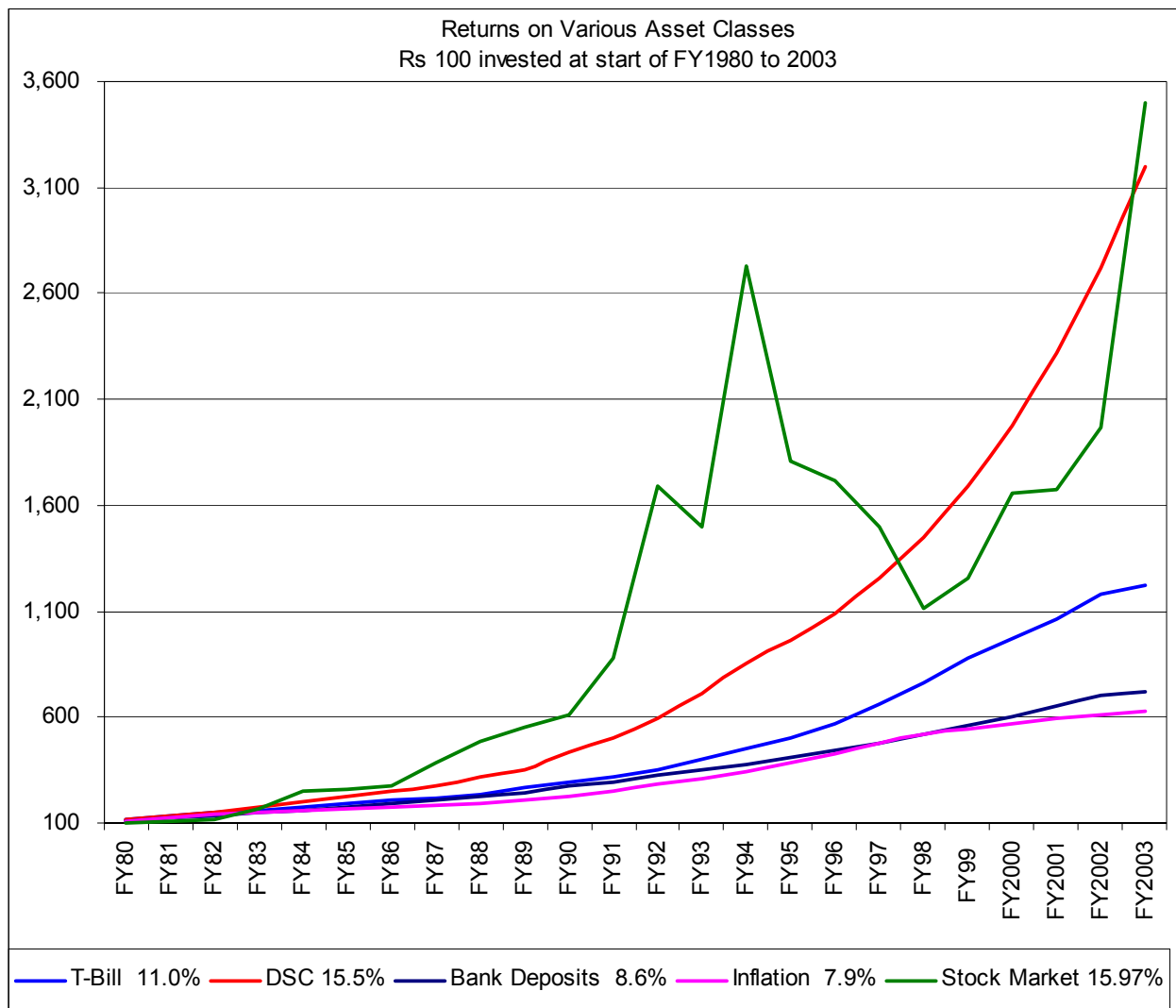
If a retired person had his money invested in shares of cement companies, he might not have lived to see the turnaround. Clearly this would not be a desirable position to be in. You must have the time horizon to brave out the difficult times and you cannot have all your assets in shares of companies. The risk of investing in shares will also depend on the type of industry. Certain companies such as utilities supply companies may be less risky because they are likely to have a fairly stable business and therefore stable earnings (dividend paying capacity). On the other hand, cyclical businesses such as cement are more risky. The cyclical business may have a larger growth potential as compared to utility supply companies. But because of their relatively volatile earnings from year to year, the share prices of such companies are likely to be more volatile. Thus an investor in shares can manage risk and reward by opting for stable earnings (price stability) and foregoing growth potential or vice versa.



## Equity Returns

We have already explained earlier that equity investments should normally be more profitable than the interest rate paid to lenders. Higher returns for equity investments relative to interest rates should also result in beating inflation (remember, interest rates have to compensate more than the underlying inflation rate). The reason businesses can beat inflation is simply because they are able to adjust the selling price of their products to remain ahead of inflationary cost increases.

The chart below shows the historical returns on various forms of investment in Pakistan. We have taken 1980 as the starting point and assumed that Rs. 100 were invested in Defence Savings Certificates (DSCs) and reinvested on maturity, every 10 years. We have also assumed that a similar amount was invested in shares (equally in shares of all listed companies) and that dividends were reinvested. Similarly, we have assumed that Rs.100 were invested in a savings bank account and a similar amount in Government Treasury Bills. We have compared this to the inflation during the period.

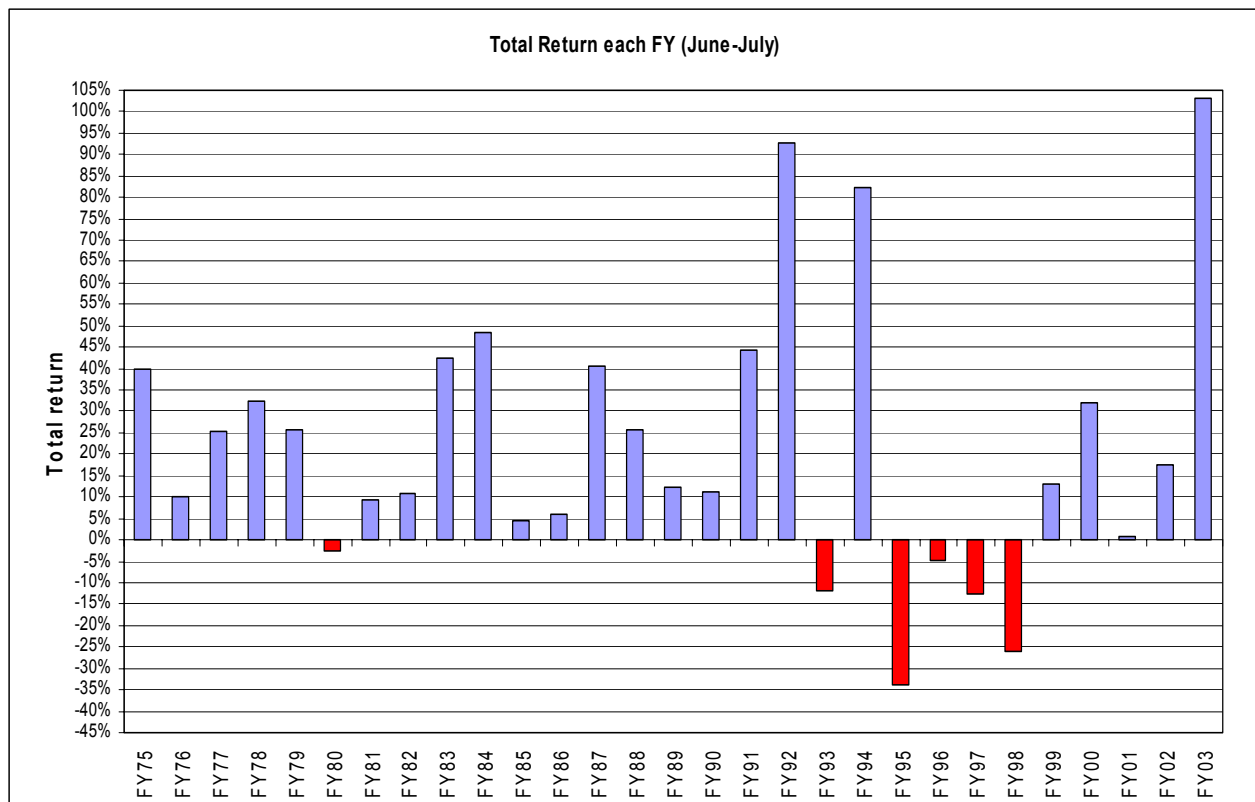


## Long-term Horizon

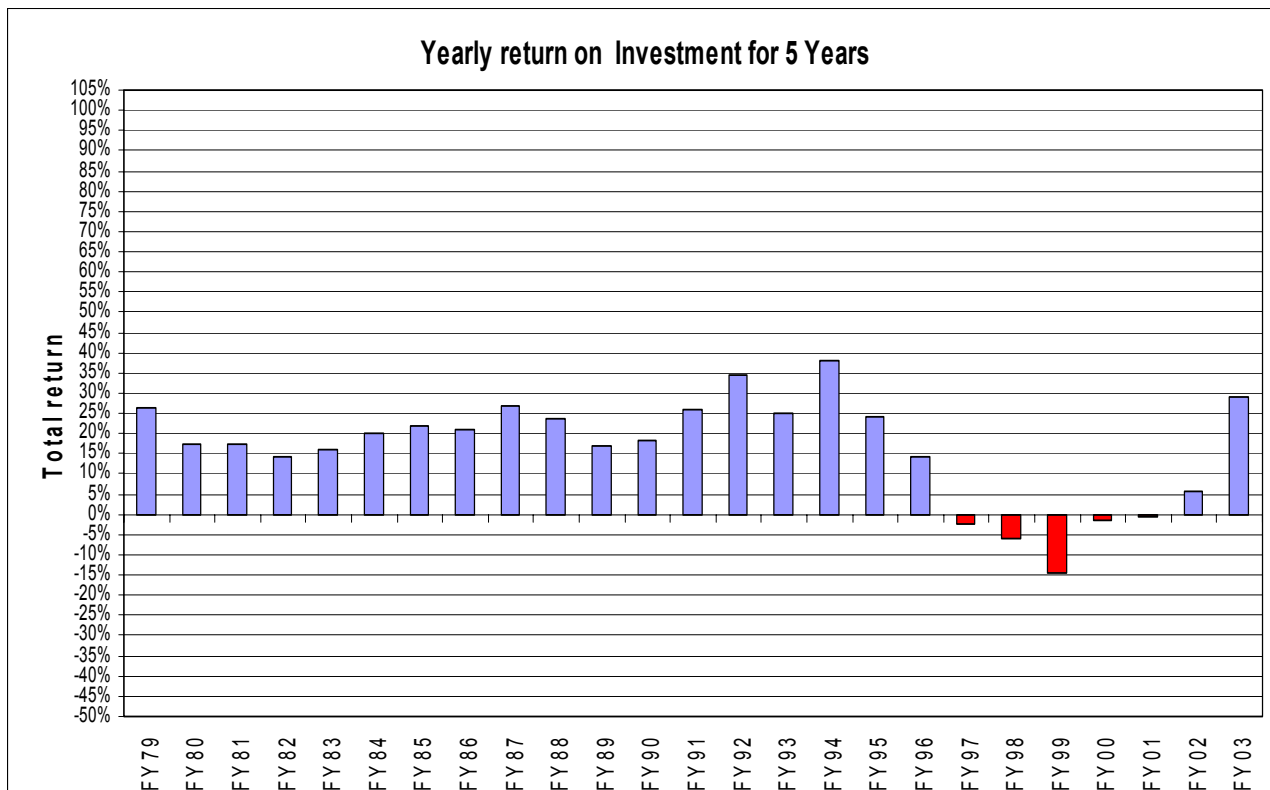
Despite the return on shares being the best over long term, there is the price volatility, which can have a serious negative impact. We have stated earlier that the market price volatility can cause temporary loss in market value of investments. Therefore if one is able to sit out the depressions, one is likely to do better investing in equities than in interest-paying investments and beat the underlying inflation rates. Historically, it is a proven fact that the long-term rate of return on equity investments is better than on debt investments. However, as a word of caution, there can be occasions when business entities will take time to pass on higher input costs to customers and they may see periods of losses. Similarly, during periods of economic depression, businesses are likely to suffer.

Thus you must have time on your side. This is a cardinal principal - invest in share of companies only if you can take a long-term view. You must not invest your emergency funds in shares, as in time of an emergency the prices might be down and you could be forced to sell at a loss. Invest only such amounts that you have the complete control over with regard to the exit timing.

Given below is a chart showing financial year wise (July-June) returns of investing in Pakistan's equity market since 1975. We have assumed that one has invested in all the shares in the market without picking some over the others. The return is the total return, i.e., the dividend plus the capital gain or loss. The assumption is that one invests on the first day of the financial year and disinvests on the last day of the financial year. You will see that the highest return was in 2003 at 103% and the worst year was 1995 with one losing 34%. The chart also shows that during the 29 periods covered by the chart, there were six periods of investment that resulted in a loss, with the 1990s seeing several bad years.

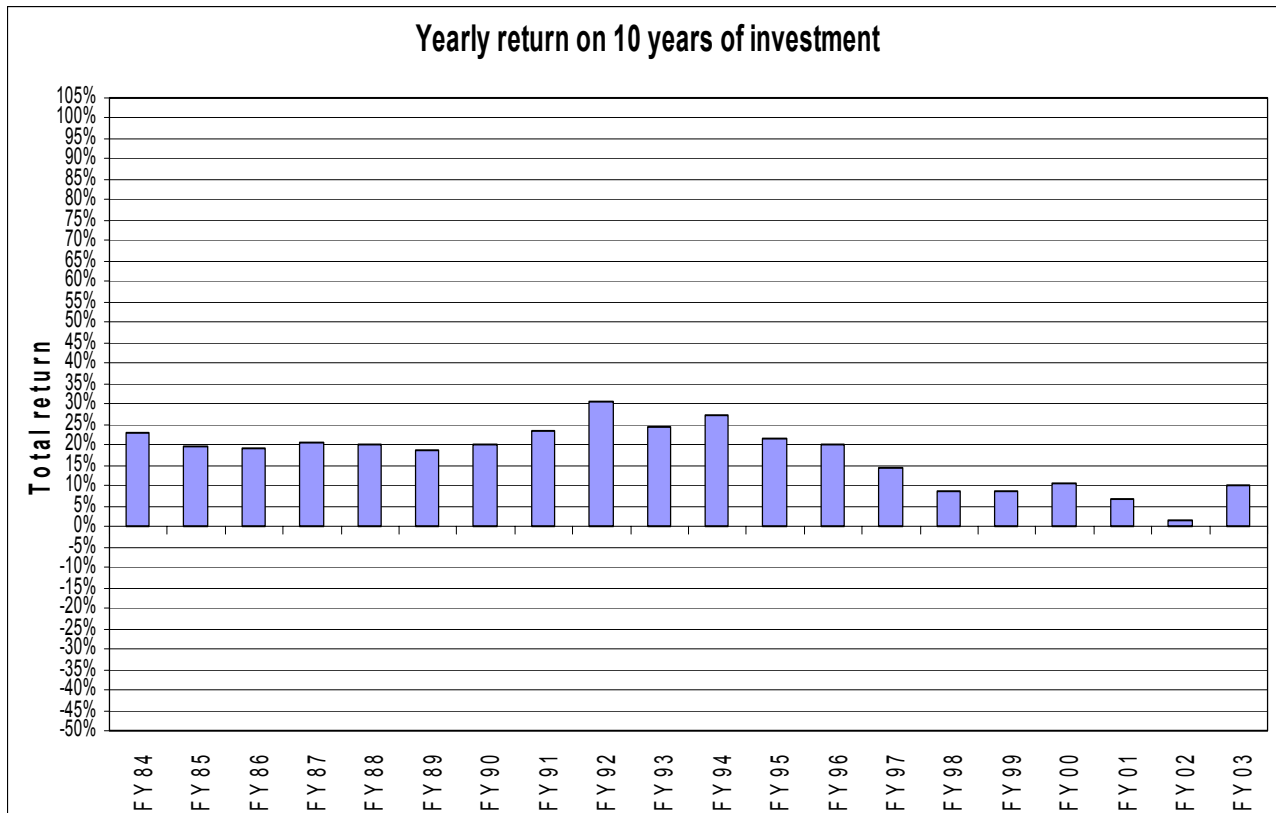


As opposed to taking one year investment horizon, if we take the above indicated market returns and assume that one's investment horizon was five years and we look at periods of five year returns, i.e., we assume that an investment made at the beginning of the financial year 1975 would be held till the end of the financial year 1980 and that made at the beginning of 1976 would be held till the end of 1981 and so on. The compounded average total returns (average return per year) for these five year periods are given in the following chart:



You will see from the above chart that the number of the loss making periods are 5 with the maximum loss at 14% and the maximum gain at 38%. It may be noted that the second half of the decade of the 1990s was particularly bad. This resulted in exceptionally poor results for equity investors even on a five-year investment horizon.

The following graph assumes that the investment horizon is ten years, i.e., an investment made in 1975 is held till 1984 or that made in 1994 is held till 2003. You will note that none of the ten-year periods result in a loss and that the maximum return in a ten-year period is 30%.



We have run such exercises for several time horizons and the results are summarised in the table below:

Investment horizon	Frequency of loss	Probability of loss	Maximum loss
01- year	6	20%	(-) 34%
02- year	4	14%	(-) 20%
03- year	3	11%	(-) 11%
05- year	5	20%	(-) 14%
07- year	2	09%	(-) 7%
10-year	0	0%	0

As stated earlier, the second half of the decade of the 1990s was particularly bad. This resulted in exceptionally poor results for equity investors even on a five-year investment horizon during that period. This also highlights the fact that equity investment is best suited for a ten-year horizon or more.

## **Diversification**

Another cardinal principal of investing in equities is that you must diversify. The proverb “not having all eggs in one basket” holds true for investing in shares more than for any thing else. Ideally your assets must be split into financial and non-financial (e.g. real estate) investments. Within the portfolio of financial investments it must further be split into different types of investments – bank deposits (to meet immediate needs), debt securities (bonds, TFCs etc) for protection from volatility and equities for better long-term return over inflation for protection of purchasing power. Within the equities portfolio, you must diversify between business sectors and within that amongst different companies. The idea is that despite careful investing, some companies may run into problems but hopefully not all will. Similarly not all business sectors should do badly at the same time. The desired level of diversification will not normally be feasible for small investors - they should look at investing through mutual funds, a matter dealt with in the later part of this booklet.

## **Valuation of Shares of Companies**

In the earlier parts of this booklet we have explained that buying a share of a company is like becoming a partner in a business. A business will normally have two ingredients that give it value. One ingredient is the value of its assets (the value of say a factory, value of stock in trade and value of trade receivables etc., less the money it owes to banks, creditors etc.); and the other is the value of the franchise i.e., its products, its market strength, its management quality, its financial resources etc., which culminate in the profits it can generate. We will address each ingredient separately.

## **Book Value of a Company**

When a business is set up, it acquires certain assets. These could be a factory building, and plant and machinery. In addition, it may also invest in raw materials etc. These items are referred to as its assets and will include any bank balances as well as any trade debts that it has to receive. This is an indicative list of assets but not an exhaustive one. Over the course of time, it may add some assets and dispose off some. Accountants record the value of these assets in the company’s books at original acquisition cost and do not normally adjust the books to market value of the assets. However, they do recognize the fact that assets have a useful life and they record the fact that the assets diminish in value over that life. They record this loss in value in the books and call it depreciation (and amortization). Similarly, some book debts can become uncollectible or some stock in trade can become unusable or loose value. Here too, the accountants record this loss. If we add up the book value of the assets and deduct from there the money the business owes to others, we are left with the book value of the business. If the book value is divided by the number of (ownership) shares that a company has issued, we will get the Book Value per Share. This is also called the Break-up Value per Share.

## **Market Price Vs Book Value**

It is reasonable to expect that the market price of the share of a company will normally be at least equal to the book value per share. In fact, over a time period the assets may have a higher value (due to inflation) than their book value (remember accountants maintain the books at the original cost). If we were trying to take over a business, we would have to work out the book value of the company adjusted for the market value (as against the original cost) of the business. This value is also referred to the Net Asst Value. However, when we become a minority shareholder, we cannot close down the business and realize the market value of the assets; we are therefore concerned with the book value of the running business. If a business is already set up and running, we should be willing to pay somewhat higher than the book value as we do not have to wait to become operational nor do we have to go through a period when the business may be having teething problems. One of the measures stock market analysts use is expressing the market price of the share as a multiple of the book value. The market price of a well-established company should

normally be higher than the book value. We can express this mathematically – if we divide the market price of the share by the book value, the answer should be greater than one. How much greater will depend on the franchise value (future profitability) of the business. But if the market price divided by the book value is one or below one for a well-established business, the price would indicate value for money (an attractive purchase price), provided there are no serious threats to the future of the business.

## **Franchise Value**

As stated earlier, the franchise value is the strength a business entity builds, which results in its profitability. The expected profitability of a company is the key factor that will determine the price we should be willing to pay for the share of the company.

## **Earnings per Share**

The earnings of a company belong to the shareholders. In order to determine the right, one share is entitled to, over the profits of the company, have to divide the total profit earned by the company by the number of shares the company has issued. This is the Earnings Per Share, referred to as EPS. Stock analysts try and forecast the EPS of a company in order to determine a fair value of the company. For this purpose they use both the past track record of the company and also try and factor in future estimates based on the company's management quality, the demand and supply for the company's products (and services), the overall forecasts for the business sector and the economy in general. Based on the forecast of the earnings, we can try and estimate as to how much of the earnings the company may retain for expansion and how much it may pay out in dividends.

## **Price Earnings Ratio**

The stock analysts also express the market price of a company's shares as a multiple of the EPS. This is called the Price Earnings Ratio (PER). For example, if the share of a company is trading at a price of Rs. 20 per share and its EPS is Rs. 2 per share, the PER is 10 times. The PER (or Multiple as it is also referred to) may also be looked at in another way. If we are paying a price which is 10 times the earnings of one year, we are looking at investing in a business with a ten-year payback, i.e., we will invest Rs. 20 now (if the earnings remain at the rate of Rs. 2 per share, per year), we will earn back our money in ten years. As to what is a fair Multiple depends on several factors. First of all, we look at the risk free rate of return. You will recall that we consider government bonds risk free and we expect these bonds to give a return that will at least exceed the inflation rate.

Assuming a ten-year government bond has an interest rate of 5% per annum, we can express this as a Multiple of the earnings too. For example, if the bond has a face value of Rs. 100,000 it will give a return of Rs. 5,000 per year; or in twenty years we will earn Rs. 100,000, so the bond has a twenty-year payback or what we pay for it is a twenty-times multiple of the earning from it. An investment in a business is subject to some risk and we would want a better payback period. In other words, we want to earn back the investment in less than twenty years. If we are investing in a business where we feel that the franchise value is good and it has very low risk, we may be willing to go for say a fifteen-year payback. In other words, if the expected EPS of the company is Rs. 3, we would be willing to pay upto Rs. 45 per share. Alternatively, if the company's expected EPS is Rs.4 we would be willing to pay upto Rs. 60 per share. On the other hand, if the expected EPS is Rs 3 and we consider the company to be of a higher risk, we may want our money back in ten years; in such a case the PER would be 10 times and the maximum price we would be willing to pay will be Rs. 30 per share.

## **Loss Making Companies**

It would appear that a loss making company should have no franchise value and we should therefore not be willing to pay anything for its shares. However, it is the expected profitability that we look at and not simply

the losses in the past. Of course, the past performance may be indicative of future performance. But we will also keep the book value in mind. On the other hand, if it is a company that is likely to shut down, we would look at the net realizable value of its assets. Such assets would include the tangible assets like land, buildings, plant and equipment etc., and non-tangibles as well, such as any intellectual property, brand names etc.

### **Earnings Multiple and Market Sentiment**

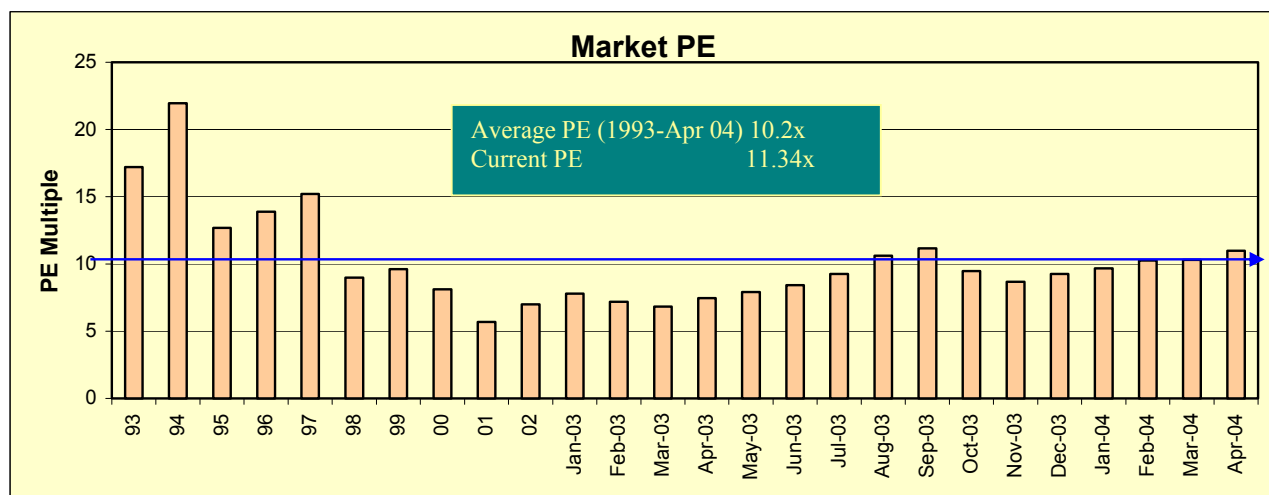
As has been explained earlier, if we consider the future profitability of a company to be reasonably assured (i.e., subject to low risk), we are willing to pay a higher multiple of EPS as compared with that for a company with lower level of certainty (higher risk). Similarly, we also have a feeling for some business sectors to be more stable than others or we may consider certain sectors due for a turnaround (or a slow-down) in the future. The collective feeling of participants in the market results in the PERs (price earning ratio) to be different for different sectors and types of businesses. Generally speaking the commodity-based businesses (like textile spinning) are subject to higher levels of uncertainty from year to year and will therefore be at lower PERs when compared with, say, the food business, which may have more stable earnings. Equally, a Multinational selling basic consumer items will have a higher PER due to the perceived stability in earnings. Similarly, the entire economy at times looks more promising and at times less so. This will result in the entire PERs being re-rated by the market participants. A sector or company may trade at a PER of ten times at some stage. However, if there is a downward change in the market sentiment, the same sector or company may start trading at five times. This does not mean that the company has become half the company, it was but simply the fact that, because of perceived threat to its earnings, investors are now looking for a shorter payback period. The average PER for a developing country (emerging economy) will normally be lower than that for a country with a stable and mature economy.

### **What is the right PER?**

What is the right PER for a country? What is it for a particular business sector within that country? What is it for a particular company within the sector? There is no simple answer for these questions. But we remind you that it is the underlying inflation rate (the rate of loss in purchasing power of the currency) that should determine the floor (the PER for a government bond) and everything else according to the relative level of certainty of the expected profitability. Broadly speaking, the level of desired PER is influenced by various factors such as earnings growth, the level of interest rates, economic growth prospects and overall political stability. Since the early 1990s, Pakistani stock market P/Es have ranged from the high of 22 in 1994 to less than 5 in the post economic sanctions times of nuclear tests in 1998. The chart below reflects the P/E ratios for the ten years from 1993.

## Historic PER bar chart of Pakistani market (historical PEs)

The bars below reflect the P/Es for each year and those from the centre to the right reflect month wise P/Es.



The average PER (or P/E) had reverted to its historic average of around 10 times in the wake of relatively stable economic conditions, lower interest rates and improved corporate sector profitability. In fact, at the time of updating this booklet (April 2004), the average P/E was at around 11.5 times. This is being justified by the earnings growth expected in the listed companies by next year. This is explained in the following paragraph.

## Earnings Growth

We have so far considered the price of the shares of a company in terms of the EPS and PER. However, the growth in earnings of a company will impact the price of its shares. If two companies (in a similar business) start with the same earnings but the earnings of one remain constant and the other has 10% growth, we will observe the difference in the valuation of the two companies. We take the following example and assume that the PER is and remains five times:

Details		Year 1	Year 2	Year 3	Year 4
Company A	EPS	Rs. 2.00	Rs. 2.00	Rs. 2.00	Rs. 2.00
Company A	Price (5 times)	Rs.10.00	Rs.10.00	Rs.10.00	Rs.10.00
Company B	EPS	Rs. 2.00	Rs. 2.20	Rs. 2.42	Rs. 2.66
Company B	Price (5 times)	Rs.10.00	Rs.11.00	Rs.12.10	Rs.13.30

Although we are assuming the same price of Rs. 10 for both the companies in Year-1, it is obvious that Company-B should have a higher market price than Company-A in year-1, as the market will take into account the higher expected growth rates of Company-B. However, the market will also differentiate between a one-off increase in profits and sustainable growth rates, thus it will price the share taking all factors into account.



## Present Value of Future Cash Flows

In the previous example (see table) it is clear that the two companies should have different prices although their year-1 earnings are the same. The difference will arise because of the different future earnings. However, the problem in putting a value to this is that by the time the future earnings are received, the Rupee may have lost some portion of its purchasing power. The way to deal with this is to work out the present value of the future cash flows by discounting these with the risk free rate of interest (earnings from a government bond of a similar life). This may be a complicated exercise for a reader who is not initiated to the concept of discounted cash flows but it will be clear that Rs. 100,000 received today is better than Rs. 100,000 received, say, one year in the future. We explain this through the following example: If you receive Rs. 100,000 today and you invest it in a (safe) government bond with an interest rate of 5%, you will get Rs. 105,000 a year from now. This is better than getting Rs. 100,000 a year from now. Alternatively if you got Rs. 95,238 today and invested it at 5% interest, you will have Rs. 100,000 a year from now. This Rs. 95,238 is the Present Value of Rs. 100,000 being received one year hence discounted at 5%. The main purpose of putting across this concept is to assist the reader in understanding the fact that money received in the future has a lower value than money received today. Analysts use variants of this concept in calculating the value of companies and the individual shares thereof.

## MUTUAL FUNDS INVESTMENTS

A good option for most people is to invest through mutual funds. Investors, who do not have large sums of money or those who feel that they or the luxury of allocating time to managing investments in the capital markets or feel that they would not be able to understand enough to make the correct decisions, should invest through mutual funds.

### What is a Mutual Fund?

Mutual fund is a pool of money belonging to a group of investors entrusted to a Fund Manager (investment specialist) hired by the group. The Fund Manager invests the money on behalf of the investors and is paid a management fee normally in the range of 1% to 3% per year of the amount of funds under management. If there is a profit or gain on the investments, it belongs to the mutual fund owners (investors) because they mutually own the pool. On the other hand if there is a loss, it is a loss suffered by the mutual fund owners of the pool.

### How is it Different to a Bank?

A bank too manages a pool of money, but the money it receives from investors (depositors) is treated as a loan from the depositors on which the bank pays a fixed rate of return. The bank in turn lends the money to various businesses and earns a higher rate of return. The bank makes money by earning the difference between the rate at which it borrows (from the depositors) - currently around 1.5% and the rate at which it lends to the businesses - currently around 6%. The gross earning of the bank in this example will be 6% minus 1.5%, i.e., 4.5% versus 1% to 3% charged by the mutual fund manager. In the event there is a loss in the lending business, the bank will still pay the depositor the agreed rate. However, in the event the bank runs into major losses (such as major defaults by its borrowers) and has to close down, the depositors are not likely to get their full principal but will get whatever can be recovered by the liquidators.

## Types of Mutual Funds

- Closed-end Fund
- Open-end Fund

### What is the difference between Closed-end and Open-end mutual funds?

A Closed-end fund is a mutual fund that has a fixed pool of money, which is collected when the fund is set up. The fund is set up as an investment company (or trust) with a certain amount of capital (pool of money). The fund manager invests the pool in the capital markets (normally shares of other companies). An investor wishing to participate in the mutual fund, buys shares of the investment company at the time of its initial public offer or,

as in the case of any other company, the investor may buy shares of the investment company subsequently from the stock market, at the prevailing market price. When the investor wishes to disinvest, he has to sell his shares of the investment company through the stock exchange, at the prevailing price. As in the case of any other company, the price of the shares of the investment company (closed-end mutual fund) in the stock market will be determined by the supply and demand for such shares, which may be higher or lower (normally lower) than the net asset value (true value of the investment portfolio) of the investment company. Under the Pakistan law, a closed-end fund is set up under the Non-Banking Finance Companies (NBFC) Rules, 2003 and the Securities & Exchange Commission of Pakistan regulates these.

An Open-end fund does not have a fixed pool of money. The Fund Manager continuously allows investors to join or leave the fund. The fund is set up as a trust, with an independent trustee, who has custody over the assets of the trust. Each share of the trust is called a Unit and the fund itself is called a Unit Trust. The portfolio (pool) of investments of the Unit Trust is (normally) evaluated daily by the Fund Manager on the basis of prevailing market prices of the securities in the portfolio. This market value of the portfolio is divided by the number of Units issued to determine the Net Asset Value (NAV) per Unit. An investor can join or leave the fund on the basis of the NAV per Unit. However, the Fund Manager may have a small charge called “load” added to the selling price or deducted from the redemption price of the Units so as to cover distribution costs. Under the Pakistan law, an open-end fund is set up under the NBFC Rules, and are regulated by Securities & Exchange Commission of Pakistan regulates these.

### **What are the benefits of investing through mutual funds?**

Mutual funds allow investors to benefit from the collective strength of the group (pool). The benefits include:

#### **Services of Investment Professionals**

An average investor is not well versed in the capital markets or may not have access to adequate information to invest successfully; or may simply not have the time to acquire information and analyse it. By investing through a mutual fund, the investor is able to acquire the services of a team of professionals dedicated to the investment business, whose cost is spread over the entire pool and thus is at a very low cost for the investor.

#### **Ability to Diversify**

An average investor will normally invest small amounts of money and cannot achieve an adequate level of diversification. An investor of even a small amount in a mutual fund will achieve immediate diversification by becoming a part owner of the entire portfolio of the mutual fund.

#### **Ability to invest very small amounts**

An investor, who wishes to invest very small amounts, even Rs. 1,000, can do so by investing in some mutual funds (normally open-end funds). The same amount of Rs.1,000 will not be entertained by any broker in the capital markets, which are normally the exclusive domain of the rich and wealthy.

#### **Ability to multiply savings**

If an investor wishes to build up savings of small amounts every month, he does not have to wait to first build up large enough amounts to invest meaningfully. By investing every month in a mutual fund, the investor can make the monthly savings earn and grow as these are accumulated.

#### **Ability to diversify price volatility risk**

At the point in time when an investor has some funds to invest, the market may be rising (bullish) or declining (bearish). He is never too sure if he is entering the market at the right time. By investing small amounts in mutual funds regularly, the investor is able to average out the fluctuations in the purchase price – some investment will be made when the market is high and some when it is low; the average investment is likely to be at the mid-point.

### **Ability to match investment with risk taking ability**

Most investors have their own unique risk taking ability. Retired persons will normally have a low risk taking ability. On the other hand, younger persons or persons with adequate resources are normally able to take higher risk and should therefore be able to benefit from higher potential rewards.

Mutual funds normally offer different investment styles, i.e., there are funds that invest in the stock market and carry a higher potential risk and reward. Apart from stock market funds, there are mutual funds that invest in the debt securities, which exposes one to relatively lower risk; and then there are mutual funds that invest in money markets, which exposes one to very low risk. By allocating one's savings into several mutual funds, the investor can balance out the investments into a combination that suits the investor's risk taking ability.

### **Less volatile**

By investing in diversified assets, mutual funds are generally less volatile than the average equities portfolio of an individual investor.

### **Size does matter**

With the growth in the size of funds under mutual fund management, the reach and dimension of that fund in itself enhances its ability to exploit investment and trading opportunities in the market.

### **Liquidity**

Money invested in mutual funds can be redeemed either by selling the shares of a closed-end fund in the market or by simply asking the Fund Manager for redemption (refund at current market price) in the case of an open-end fund. There are no penalties for early termination of the investment, which one may have to suffer in the case of term deposits with banks or other savings schemes.

### **Protection of Regulation**

If one invests directly in the capital markets, the rule of Caveat Emptor or "buyer be ware" applies in its full meaning. However, in case of investing in a mutual fund, one is protected by the government-enforced regulation of mutual funds. In most countries Mutual Fund Managers are regulated under fairly stringent regulatory rules and investors can rely on the enforcement of good practices by the fund managers. In Pakistan the Securities & Exchange Commission of Pakistan (SECP) is the regulator of mutual funds and is very stringent in issuing licences to fund management companies, especially in the case of unit trusts. The SECP also carries out continuous monitoring of mutual funds through reports that the mutual funds have to file with the SECP on a regular basis.

### **Protection through the Trustee**

In the case of unit trust schemes, the trustee, who has to be qualified under the law to act as such, offers additional protection by having complete custody over the assets of the mutual fund. The trustee ensures that the Fund Manager takes the investment decisions within the defined investment policy of the mutual fund. Under Pakistan law, banks and central depository companies, approved by the SECP, can act as trustees.

### **Why invest through mutual funds?**

The benefits of investing through mutual funds have been elaborated above. The simple fact is that most people do not have time outside their work and family life to scrutinize dozens of stocks and bonds before putting their money in for investment. This job can be left to professional managers. Anyone can pick and buy certain hot stocks and make money in the process. However, this fact should not make us believe that we will always hit a sixer. It is an established fact that majority of part-time speculators lose in the game of speculation. One should not confuse speculation for investment. Investment through mutual funds is an ideal option for those investors who do not have time to explore investment opportunities in today's dynamic and ever changing capital market conditions.

### Which Mutual funds to invest in?

Following are the basic guidelines for choosing which funds to put money into:

- Well-established and reputable companies managing the Funds.
- Fund Management Companies that issue timely, transparent and investor friendly reports.
- The Fund Management Companies that follow good corporate governance practices and comply with proper disciplines.
- The offering document (prospectus) of the particular fund has a clearly defined investment policy and clearly states the potential risks.
- Choose a Fund, the investment policy of which is suitable for the time horizon of your investment and the level of risk that investment can be exposed to. However, it is recommended that, you should allocate the investment amount between two or more Funds that suit the criteria. This will ensure that you diversify the risk on the fund manager performance as well.

### Conclusion

The market is an ever-changing place – new concepts and products are being introduced continuously. Some products are common in other markets but not as yet in Pakistan. We have attempted to address the basics of securities traded in the capital markets and have deliberately kept away from convertible bonds (hybrids between equity and debt securities) and derivatives, which are not common in our market as yet. Some readers of this booklet may feel that we should have put across the concepts in simpler language. We do apologize to any such readers and would urge them to seek professional advice from licensed Investment Advisors, who are regulated by the Securities & Exchange Commission of Pakistan (SECP).

A final piece of advice, please take your time over your investment decisions. Do not be pressured by anyone telling you that you are about to miss an exceptional opportunity to make money – **It is better to lose an opportunity than to lose your money.**

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This booklet was originally written in the form of a series of articles for a newspaper in the year 2001 by Nasim Beg. It was subsequently converted into this booklet in 2002 and has now been updated in June 2004. Nasim Beg is the founding Chief Executive of Arif Habib Investment Management Limited, a mutual fund management company based in Karachi.

The booklet has been printed by Arif Habib Investment Management Limited for free-of-cost distribution in its effort to promote investor understanding of the risks and rewards of the capital markets. However, readers who wish to support the cause of education are requested to fill out the following form and send a donation, preferably of Rs.100 or more to the Citizens Foundation.

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