Chapter 1: Basic Concepts

(Learn the basics of savings,investment, borrowing,inflation,interest rate).

Article-1:Meet the Trimurti

Bulls make money, bears make money, but pigs get slaughtered!
A long time ago when I was a kid...

On one sunny day that I still have fond memories of, my father came home in the evening with a toy pig. I turned it around and discovered that it had a hole in its back. My dad announced that it was my 'Piggy Bank'.

He fished out a 10 paise coin from his pocket and instructed me to put it through the hole in the pig's back. I did it eagerly, expecting the pig to start walking. Walk it didn't but my father patted me on my back and said,

"Son, this is your first saving. I will give you 10 paise everyday and when we have collected Rs50 we will go to the bank and get you a savings account."

Savings! suddenly a new activity had begun in my life that I understood nothing about.

My Dad noticed the puzzled look on my face. He scratched his head and suddenly a meaningful look came in his eyes. I think he remembered the ant menace that my mom had been complaining of for the past few days. He showed me the ants that were carrying grains in a line to their hiding place.

"The ants are carrying grains and saving it for a rainy day, he said.

He took out my World Book Encyclopedia and showed me various other animals that save food for a time when they may need it.

"You know that I go to office to earn money for all of us. But when I turn 58 years, I will have to retire and stop going to office. We will need money to buy food and clothing even after I retire from my job and stop earning. I need to save now, so that I can pay for our food and clothing later," he explained.

"Similarly, you can save the money I give you now to buy a good book or a paint box later," he impressed upon me.

That was my first lesson in 'saving'.
A few years later I learnt in my class that all of us have two choices. We can consume now or can consume later. Hence, savings is just postponing consumption.

Does it then mean that only what we consciously keep aside for a rainy days is called "saving"?

"No, what ever you do not manage to consume and stays as a surplus is also 'saving'. But that is a lucky state to be in," my teacher responded.

And that set me thinking...

"If I can 'save' to consume at a later date, I can also spend more now if I know that I can earn enough surplus to pay for it later..."

Just then my teacher's booming voice interrupted my train of thoughts...

"Borrowing is the opposite of saving," she announced.

Now that was easy to visualize.

I had a classmate who was fairly irregular to class, spent a lot of time in the school canteen and supposedly even bunked classes to watch the 'matinee'.

How did he manage to pay for all his nefarious activities?

Well, he used to borrow money from a few friends of mine who saved their pocket money.

During the break, I manage to accost one of those friends who had lent money to my classmate.

"I can understand why Ramesh (by the way, that was my classmate's name) borrows from you. But why do you lend him money? Can he pay back?"

"Look, I don't really intend to spend all my pocket money. I am saving up for a new cycle. Money always burns a hole in my pocket. Hence, I lend it to him," he answered.

"Ramesh has a rich father, who is a family friend," he explained. "I know that I can get my money back. Ramesh also knows that when he turns 18 he will look after his family business and earn well. And then he will have no time to have the fun he is having now. Hence, he borrows to spend," he added.

Learning for me again

'Saving' is not consuming everything today and leaving something for tomorrow whereas

'Borrowing' is consuming more than what one has today, expecting to save more later to pay up for the excess consumption now.

While 'saving' is being conservative and wise, 'borrowing' is being risky and foolish unless for a basic need. Hence, it makes sense to borrow only when one is sure that in the future he will be able to save enough not only to pay up for his borrowings but also to see him through the days when he cannot earn.

What is 'investing' then?

This question bothered me till I had my first mug of beer from some bottles that we had smuggled in from my friend's place (it belonged to his father who owned a liquor shop).

Oh boy! I loved it so much, the beer I mean. But soon an idea suggested itself to me. If everybody starts liking it, the demand for beer is definitely going to rise. The growing population will ensure that the demand sustains. Wouldn't then it make a lot of sense to set up a company to manufacture beer? If demand drops then my friends and I can very well step in!

I had grown up finally from the days of aspring to be a bus conductor to wanting to own a beer factory now!

The next day, I started discussing my ambition with my friend's father. During the course of our conversation I learnt of the money needed to buy the fermenting equipment that can produce beer for years to come.

By selling all the beer that can be manufactured, I can recover the initial money spent on the business by the end of three years. Beyond that, the money that I'll make will be surplus. That would be an awful lot of money.

Of course, I remembered that as 'Investment' from my economics textbook.

In other words, 'Investing' means building up to meet future consumption demand with the intention of making surpluses or profits, as they are popularly known.

Investments are risky

True, what if tomorrow everybody decides that 'beer' is yuck. Maybe the government will ban beer consumption. Or your plant might develop a big problem for all you know. Hence, there has to be a reasonable profit expectation to motivate an investment.

Also, when you or I 'invest', we forego our present consumption or do it out of our surplus. In

other words, 'savings' again supports 'investment'.

Interesting isn't it?

We started with three things that looked as different as chalk, brick and wood, but discovered that the three ('saving', 'borrowing' and 'investing') are related.

But then, I have a few questions in my mind already. I am sure you would have some too.

What if I save Rs1000 over 10 months to buy a cycle and the price of the cycle shoots up by 20% by then? I am losing the 'purchasing power' of my Rs1000. Is there some way I can make up for the risk of losing my purchasing power?

Getting a little complicated for now. Let us unravel it later.

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Article-2:Inflation *ke piche kya hai*?

I love my gandfather's stories. Who doesn't? We won't get into the ones that my grandma loves to scoff at. Like his brave encounters with tigers. Or the one about the milk that needed boiling.

But you must listen to this one. My dear grandpa used to buy 10l of milk for 50p and 40kg of rice for Re1 a good fifty years ago!

Don't believe me? Then sample this. In those days, there were coins of 1p and even less! Incredible, eh? But I have seen those with my own eyes in my father's collection of old coins.

What more, I also remember seeing and transacting in 5p and 10p coins in my childhood. Alas! my son won't get to see those currencies. Except in an collection of old coins perhaps!

Wondering why I am rambling about 1p coins and getting into the generation business?

This is not a *"Kal Aaj aur Kal"* story. Or maybe it is.

If you have an eye for detail you will have noticed the common thread that runs through these anecdotes. The point that I have been trying to make is how expensive things have become over the years.

My grandfather used to buy 40kg of rice for Re1 and today a kilo of rice costs Rs20! 10l of milk cost 50p in his days but today you need at least Rs120 to purchase the same amount.

See what the passage of time has done. It has eroded the value of money. Having Rs800 today is equivalent to having Re1 fifty years ago!

Economists call it a decline in the **purchasing power of money**. Remember we encountered this term while getting acquainted with saving, borrowing and investing? The 'purchasing power of money' is the amount of merchandise that a unit of money (say a rupee) can buy.

And the term 'inflation' has its roots right there. When the purchasing power of money dwindles with time, the phenomenon is called 'inflation'. This is manifested in a general rise in prices of goods and services.

But why do prices rise?

Let us understand why this happens with the help of a simple example:

Onions are an integral part of any food preparation in our country. Can you think of having a meal without having a dish that contains onion? Why, onion and chapattis constitute the staple diet for many people.

Let us assume the onion crop fails in a particular year, for whatever reasons.

What happens then? The **supply** of onions in the market drops. However, people still need onions. Inevitably, the price of onion shoots up as people scramble to buy the limited supply of onions.

Remember November 1998? Such a situation actually happened in several parts of the country. It nearly brought down the government! The price of onions rose to as high as Rs40 per kg or more.

But how does a simple thing like a one-off drop in onion supply cause prices to rise across the board in sutained fashion?.

In the winter of 1998, the dabbawallas and restaurants were forced to hike their prices in

response to the rising prices of onions. Even your local barber and maidservant demanded a higher pay to meet their higher daily expenses. All thanks to the (mighty?) onion. And this set off a chain reaction.

How?

Think again. It is not only onions that we consume in the course of a day. There is a whole basket of products and services that we draw on, on a day-to-day basis.

Hence, some of you decide to use more of garlic to make up for the lack of onion. The demand for garlic goes up. A few who eat raw onions decide to substitute it with more of tomato and cucumber. The local sabjiwala senses this shift in consumption happening. The smart businessman that he is, he hikes prices of all vegetables. He starts earning more money. Now his children demand that he should get them a new 21" TV with 100 channels.

And with all sabjiwalas rushing to the nearest TV shop, the sales for TV picks up. The TV company makes more money. Noticing the ballooning profits, the employees of the company demand a hike in their salaries. You are lucky to be working for one such company. You have more money in your pocket. And you have always wanted to buy a car...

We could go on and on, but you get the idea,don't you? The price rise is here to stay. Any guesses on who actually benefits and who loses from this rise? Can 'inflation' lead to prosperity?

We are posing a lot of questions. Do not worry we will come back to answer them later. Write in at school@sharekhan.com to tell us. Maybe we will use your response itself!

But, for now we just need to understand the concept of inflation. After all, the main objective is to figure out how inflation affects the three friends we met last time - saver, borrower and investor.

Last time we understood how important it is for all of us to save. We all need to save for the day when we will not be earning but will still need to spend money on food, clothing and the occasional movie.

What would have happened if my grandfather had saved a rupee fifty years back to buy rice now? Oh boy! It would have been a total rip-off. He would receive a few grains of rice in exchange for that amount.

In short, inflation is one BIG enemy of savers.

So, why should we save?

A good and important question. But we will come back to it later. We need to find out how this monster they call 'inflation' impacts our two other friends.

We have already discovered that 'borrowing is the opposite of saving'. So if the saver is losing, our borrower must be winning.

Yes, of course. After all, the borrower borrows to spend today and repay later. Imagine if my grandfather had saved a rupee fifty years ago and my grandfather's neighbour had borrowed it from him. The neighbour could have bought 40kg of rice then and had a feast. In case he repaid the money to my grandfather now, all that my grandfather would have been able to buy is a few grains of rice!

To top it all, the borrower spends NOW and adds to the inflation effect, doesn't he? And compounds the misery of our saver.

What about our last friend, investor, the slightly difficult one to understand?

Imagine once again (just one last time, we promise) that my grandfather's friend had invested a rupee in a paddy field, that is bought a paddy field with a rupee. The smart guy would have been raking in money today, selling a kg of rice at Rs20!

Our investor friend seems a lot better off than even our borrower who benefits from inflation.

No wonder investing is always considered as a good thing to do to beat inflation. It is what textbooks call 'hedging inflation'.

Hey, but what is happening? Last time we understood that the saver, borrower and investor are good friends who complement each other. The saver meets the needs of the borrower and the investor. Life is in perfect harmony.

Now you are saying that 'inflation' upsets this balance completely. That the 'saver' is at a complete disadvantage while the other two benefit from this poor guy.

Is life so very unfair? Should we all stop saving? Or have we missed something very fundamental?

Well, life is never unfair. We have a leveler who comes to the aid of the saver - interest.

Next time, we'll discover how interest offsets inflation and puts our saver on an equal footing with the borrower and the investor.

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Article-3:Getting even with Inflation

Time to take stock of things before we continue with our journey.

We have made three friends so far - **Saver**,**Borrower** and **Investor**.

Saver, like many of us, saves now to consume at a later date, when he may not have an income to meet his various needs. Hence, he saves for the rainy day.

Borrower, on the other hand, spends more than his means allow at a given point of time. He hopes that he will earn enough in future, when he will not only repay his creditor(s) but will also have enough money left to spend on food and other necessities.

Investor is the person with a glint in his eyes. He invests in a business that is essential to us all. He hopes to sell his products year after year. Of course, we figured out that he is the one who takes the big bets.

Interestingly, all of us keep switching roles from **Saver** to **Borrower** or even **Investor**.

We have made another discovery - the 'purchasing power of money' declines with time, thanks to the monster called Inflation.

Interestingly, Inflation bares its fangs only at **Saver**. It is a saviour of **Borrower** and a boon to **Investor**.

We have also learnt an important lesson: Investing is a good way to offset Inflation.

After understanding all this, we stopped ourselves to ask if it is worth saving.

We realised that something was missing from the picture.

And then, a bolt from the blue told us that it is 'Interest' that completes the big picture.

Question hour again

So, what is Interest? Why do we need it? How does it tilt the balance in favour of **Saver**?

Too many questions and all will be answered in good time.
Let us first assume you have Rs500 to spare. You have two options as to what to do with it - you can either buy a shirt today or you can save the money and buy a shirt six months later, during Diwali. Mind you, the same shirt will cost you Rs550 by Diwali time. So, what do you do?

You are obviously muttering: "what a stupid question!" After all, it will make a whole lot of sense to buy the shirt now as your Rs500 will not be able to fetch you the same shirt six months down the line. And why save anyway?

Hold your horses while we add another twist to the options that you have.

Assume a friend of yours needs Rs500 urgently. He is willing to return Rs550 six months hence. What will you do then?

Well, if he is a very good friend you will give him the money and postpone your plan to buy a shirt. After all, you can buy the shirt once your friend returns your money.

Another twist: what if your friend promises to repay Rs600 (instead of Rs550) six months down the line?

You will lend him that Rs500 without any second thoughts, as you will not only be able to buy the shirt six months down the line, but also have Rs50 to spare.
Lessons

1. It does not make sense to save if you have not been compensated for Inflation.
2. In order to boost your saving instinct, you need to be compensated at least for the loss of your purchasing power. That is you need to be compensated for Inflation.

In our examples, we have seen that a borrower is willing to repay a higher sum in order to compensate the lender for the loss of his purchasing power.

Some very basic arithmetic now
In the first example, you lend your friend Rs500 but he returns Rs550 six months later. That is your friend gives you Rs50 extra when he returns your money. In the second case, he returns Rs100 extra. The money that you lent him is called 'Principal'. The extra money that your friend gives is called 'Interest'.
'Interest' defined the textbook ishtyle
"Interest is the price paid for money lent by one person for the use of others." In other words, Interest is in no way different from wages that are paid as a price for the use of labour.

What is Interest Rate then?
Interest paid on principal expressed as a percentage of the principal. Hence, in our second poser, Interest Rate was 10% (Rs50 interest on a Rs500 principal). While Interest Rate in the other example was 20%.

Now we know what Interest Rate is.
The battle lines have been drawn
Interest Rate aids **Saver** by compensating for the ravages caused by Inflation. On the other hand, **Borrower** has to think twice before borrowing since he needs to pay a price.

What about **Investor**?

Investor now starts having second thoughts too.

He uses money to set up a business. Last time, we discovered how uncertain investing can be, as many things can go wrong with the business. However, the expected rewards (profit) offset the risk (uncertainty) and hence, **Investor** goes ahead.

However, now he has the option of earning Interest on his money if lends it to **Borrower**. Which is why he needs to make at least as much profit as he would have earned as Interest if he had given the money to **Borrower**.

The cycle is complete now.

When Inflation rises, **Borrower** and **Investor** have a distinct advantage.

Borrower rushes to borrow more to spend now while **Investor** smells higher profit from its business. **Saver** knows that he is at the receiving end and insists on higher Interest Rate, reestablishing the balance.
Pack up time
We have learnt how Interest swings the balance of power back in **Saver's** favour. Interest induces saving.

We will understand the relationship between Interest and Investment next time. Have a happy weekend J

Article-4:Savings vs Investments

I lost all my savings in the stock market scam of 1992.
Do I hear other murmurs that say -
"I lost all my savings in the panic that ensued after the nuclear tests in 1998."

"I lost all my savings when CRB Capital markets shut down."
Or if you want something current then try -
"I lost all my savings in the 'New' economy meltdown of 2000."

Make no mistake- these are painful statements. All through our lives, we have been repeatedly advised that we must save money for a rainy day. And when we did just that, some of us have suffered the misfortune of losing it all.

A penny saved...

... is a penny earned is what I was told by my favorite English teacher in middle school. Unfortunately that penny doesn't get us very far anymore. Nobody told me about the silent enemy called inflation that could lay waste to the coin that the tooth fairy left under my pillow. Incidentally I was also taught how to calculate interest by an excellent but stern Mathematics teacher. But at that point I did not comprehend that it (interest) was my best weapon against that stealthy enemy (a simple preference for English over Mathematics?).

Realisation dawns

In High School I was introduced to the dismal science of economics and the world of basic finance. Thats when it all fell in place - the way to safeguard my savings from inflation was to put it in the bank or invest it somewhere. So that I could earn a rate of interest higher than inflation and protect my money.

Life rolled on
I entered the workplace at the age of 22. The saving habit came naturally to me. What with all those sayings ringing in my head - a penny saved...

I was determined. I wasn't going to let that sneaky character 'Inflation' get at my savings. No simple bank deposits for me - I was going to beat the hell out of inflation by investing my savings profitably in the stock market. In fact, I would beat the rate of inflation by a wide margin. I was too cool for my own good. And with impeccable timing, I caught the concluding part of the great Harshad Mehta orchestrated boom (caught in the Bulls' tail!). But I caught the full impact of the

downdraught that followed the famous boom. The rest is history.

Some more...

My financial situation or shall I say penury as a result of that debacle taught me some more lessons that none of my English, Mathematics or Economics textbooks had. A new host of aphorisms pored forth- No free Lunch, No pain-No gain...

You see it is true that you must save for a rainy day. But what follows, as a natural corollary is that to protect your savings against inflation you must invest it in some asset that will earn you returns. Be they shares, debentures, bonds, gold or even real estate.

And therein lies the crux of the issue. All these investment options have been associated with rags to riches as well as riches to rags stories. So - Investing is a risky business. The higher the return you expect from your investment, the higher the risk you will have to take. Your savings are not savings anymore. When you decide to invest your savings you are crossing the Rubicon threshold. Your savings have now taken the form of Risk Capital.

Risk capital?

Yes, because that is what it is. Don't panic at the thought. You could put your money in a government bond or in a NSC and that would qualify as almost a zero risk investment. (Actually it is just the lowest risk investment available to you, but that's the topic of another debate). And at the other end of the spectrum you have equities, which come with a high degree of risk. So do Gold and real estate. But we'll discuss that some other time.

It's time to step back and spell out what I have learnt

- Savings is the difference between Income and Expenditure
- You must save for a rainy day
- Savings have no 'form' and must be protected from Inflation
- When you invest your savings it has morphed into Risk Capital
- Risk Capital can be eroded
- Risk can be minimized by choosing to invest in low risk investments
- The risk associated with each investment changes with time, and must be monitored carefully.

The take home from all of this is that the Rubicon must be crossed. And this is not a Catch-22 situation. Yes you must invest to protect your savings from inflation but that need not necessarily place your financial future at jeopardy. There are low risk investments that exist in the market

place. You can structure your investments based on your appetite for risk.

Words of Wisdom

I am now wiser. Wise enough to encapsulate all of this into my own saying - **'It is not how much you save but where you invest it that counts'** - Sharekhan circa 2000.

By the time you get to this point in the write-up, you may be feeling just a wee bit nervous about your savings. Nay, Investments. Don't. At the end of the day, Investing your Savings is like falling in love. It can be risky and it can hurt, but that doesn't stop us from falling in love does it? For the heady and glorious experience....

The old adage, "its better to have loved and lost than never to have loved at all" may assume a new meaning.

Investing can be a rewarding experience just as being in love is.

Article-5:Time value of money

Remember our three friends - **Saver**, **Borrower** and **Investor** and their tryst with Inflation?

Inflation is detrimental to **Saver** but favourable to **Borrower** and **Investor**.

But this lop-sided scenario can't last forever. **Saver** can't always be the 'poor guy'. And **Borrower** and **Investor** can't benefit endlessly at his expense.

We surely know why. If things continue as they are, then all of us would want to be borrowers and investors! And nobody would bother to save!

So, the stage is set for a new character, who would balance the disequilibrium. Enter Interest, the great balancer.

Interest tilts the balance in favour of our friend **Saver**, thereby levelling the playing field for our three friends. But how does he do that? **Saver** demands interest for postponing his consumption while **Borrower** and **Investor** have to pay up Interest for using **Saver**'s surplus.

Hence, what **Saver** loses owing to Inflation, he gains through Interest.

Now that we have seen how Interest restores the balance, it is time for us to move on...

Assume that your friend calls and offers you Rs1000. He says that you can have it either now or tomorrow. What would you choose?

Pretty simple, eh? Your voice is loud and clear as you say, "I want now."

Just in case you choose to have the dough tomorrow, do let us know at school@sharekhan.com

So, why did you choose to have the Rs1000 NOW?

You obviously are thinking of the many things that you can do with that money. You can buy a couple CDs or a pair of new jeans or even the pair of shoes teasingly displayed at the shoe shop on the way home. After much deliberation, you decide to go for the pair of shoes. With the cash in your pocket, all you need to do now is go to the shop and buy.

However, your friend is too busy and is unable to give you the money today, but he promises that you will get it a month later. You are sorely disappointed. All your plans of buying that pair of shoes lie shattered.

"Or what if somebody else buys those pair of shoes, which may well be the last such pair on earth?"

"Or what if your friend delays his gift by another month?"

'If' - the root of all uncertainties! What we commonly term as 'Risk' and what can ruin all your well laid plans...

Hence, if you have a choice, you would rather go to see this friend at his office and collect your money today.

Why would you do that?

This brings us to a fundamental truth: Time has value.

We all know that the value of a rupee does not stay the same across time horizons. Due to Risk and Inflation, a rupee today is worth more than a rupee tomorrow on the time line.

In simpler words, we are saying that the value of the same rupee differs at different points of time. This difference in value arises due to the passage of time. Hence, it is called the 'Time Value of Money'.

Expressing this in numbers, if you believe that you can buy the same pair of shoes with Rs1100 a month later, then the time value of money for you is Rs100 for a month.

Twist in the tale

Now, let us assume that your friend actually turns up and gives you Rs1000. But while on the way to the shoe shop you meet your old classmate who badly needs Rs1000. In that case, will you part with the money?

You would, provided he promises to return at least Rs1100 a month down the line, so that you can buy the same pair of shoes. (We know that, in real life, you would not take a penny more than what you have lent to your classmate, but just for academic purposes!)

So, what do you call this extra payment that you demand over and above the amount you have lent?

If the answer is 'Interest', you are right. But then what is Interest? And why is it charged?

Let me explain. When you are lending the money to your friend, you forego an opportunity to buy the shoes and use them when you wanted. Hence,you would charge the cost of losing this opportunity, commonly termed as 'Opportunity Cost', to your friend in the form of Interest.

One last exercise before we bid goodbye to 'Time Value of money' and 'Opportunity Cost' for now.

What is the Opportunity Cost for our friends, **Saver**, **Borrower** and **Investor**?

Saver:

Saver is a lot like you. He needs to get compensated for the erosion in his purchasing power with time as also the risk associated with postponing consumption.

Borrower:

Now that **Saver** has an ace up his sleeves in the form of Interest, **Borrower** needs to evaluate his decision to borrow and consume now. Why? Now there is interest to contend with.

Lost? If your classmate is borrowing Rs1000 from you today to meet his needs and is repaying Rs1100 a month later. Then, he is better off fulfilling a need of his that will be worth at least Rs100 more a month later.

Investor:

Our most enigmatic friend, **Investor** has several opportunities knocking at his door. He can set up a beer factory or open a restaurant among other things. We could actually exhaust this page writing about the options that he has staring at him. As we all know, our clever friend hopes to maximise his profits and minimise his risks.

In case he decides to set up a beer factory, the profits he would have earned by setting up a restaurant are considered as his 'Opportunity Cost'!

He also has a very basic 'Opportunity Cost'. He can opt to lend his money to **Borrower** in return for Interest payment. Thus his investment needs to fetch him enough profits to compensate for all this.

Hence, **Investor** needs to know the value of his future profits in today's terms for all the investment opportunities. Only then can he make the best choice. This brings us to another vital concept: 'Present Value'.

But we will discuss that next time. Watch this space. Till then, take care.

Article-6:Power of compounding

"Compound interest is the eighth wonder of the world"
- Benjamin Franklin

"Compound interest is the world's greatest discovery"
- Albert Einstein

"In case you earn Rs20,000 per month, do you know how many years it will take for you to become a Crorepati? Not 10 or 20, but 50 years!" exclaims Amitabh Bachchan, the anchor for "Kaun Banega Crorepati".

Mr Bachchan, did you know that if you invest just Rs9,250 once and earn 15% per annum on this investment then, in 50 years you will be a 'Crorepati' too!

And in case you invest Rs20,000 every month for 50 years under similar terms, you will be worth more than (hold your breath) Rs173cr! That is Crorepati 173 times over!!!

Welcome to the 'Power of Compounding'
One of the basic premises of investing is that your money multiplies manifold over time. And this multiplication of money is normally referred to as the "Power of Compounding".

So, how does money compound?

When you invest money, it earns interest (or returns, if you may). If you keep the interest invested, then it does not sit idle while only the original investment sweats it out. The interest earns interest too! And then the interest on interest earns interest again!

That is the beauty of compounding. That is what made great men like Albert Einstein and Benjamin Franklin extol the virtues of 'compounding'.

What does the 'Power of Compounding' mean to an investor?
Ms Thrifty, **Mr Realist** and **Ms Follower** went to the same school and the same class.

On her 10th birthday, **Ms Thrifty's** father gave her Rs100. She wisely invested the money that earned her an interest of 15% every year.

Mr Realist won Rs200 as prize money when he was 16 years old. His friend, **Ms Thrifty**, advised him to invest his prize similarly.

When **Ms Follower** earned her first salary at the age of 21, she salted away Rs400 in the same

investment.

After reaching the age of 60, all three decide to withdraw their investments. Who do you think realised the most from his/her investment?

You think it's **Ms Follower**, right? After all, she invested four times the money that **Ms Thrifty** had invested. So what if she invested the money 10 years later. She did earn interest for 40 years anyway after that.

But think again. **Ms Thrifty** makes the most out of her investment! In fact, her Rs100 is worth Rs1,08,366. On the other hand, **Ms Follower's** Rs400 is worth Rs93,169!

It simply means that the LONGER you stay invested the MORE you make.
Now you know why **Ms Thrifty** made more money than **Mr Realist** and **Ms Follower**.

Let us try another small exercise.

Let us assume **Ms Thrifty**, **Mr Realist** and **Ms Follower** invest Rs100 for 10 years. However, all three of them earn interest at different rates. **Ms Thrifty** earns 20% while **Mr Realist** earns 15% and **Ms Follower** manages a 10% interest rate.

Can you work out what each one of them will have ten years hence?

Ms Thrifty will have Rs619 while **Mr Realist**, Rs405. **Ms Follower** will have the least - Rs259 in ten years. Did you notice something though? While the interest rates differ by just 5%, in 10 years the worth of the original capital, Rs100 was vastly different!

That is another way of understanding the 'Power of Compounding' or the power to grow exponentially.
Now that we have understood the magic of compounding, it is time to take a look at an interesting rule associated with 'compounding' - **the Rule of 72**.

The 'Rule of 72' is an easy way to find out in how many years your money will double at a given interest rate. Lost?

Suppose the interest rate is 15%, then your money will double in 72/15= 4.8 years. In case, the interest rate is 20%, then the money will double in 3.6 years.

Interesting rule indeed!

Moral of the story: The longer you stay invested the more you make!

Chapter 2: Understanding Equities
Equity, shares, stocks ù so many names. But what do they all mean?

Article 1: Are you ready for equities? |
(Shares are long-term investments that cannot be matched with short-term borrowings)

Last time around, we discovered how investing in equities helps preserve and enhance wealth considerably, compared to FDs/bonds or any other investments. We explored the vital question of ?Why? invest in equities, and now we will endeavour to answer the ?When? and ?How much? questions. We will also delve into ?debt? to understand how it could upset the best of equity investment plans.

A farmer in remote Bihar borrows heavily from his zamindar to pay the dowry for marrying off his 11-year-old daughter (an extreme form of debt that we know will turn the farmer into a bonded labourer forever).

A newly married yuppie buys a car, TV, fridge on his credit card?(another form of debt that the yuppie hopes to repay with his zooming salaries).

In these instances we see that ?debt? has been incurred to spend beyond one?s current means. We learnt last time that typically whatever we earn either goes into buying food, clothes, or assets like a TV, car, etc. Or we save with the intention to use our savings during our retirement or buy a house, etc. In other words, we spend our earnings today or save it to spend it later. ?Debt? brings in a third element?while we postpone consumption when we save, we spend future savings when we borrow! In simpler terms, ?savings? and ?debt? are like day & night?they can never exist together unless it is twilight. Take the case of Nagesh, who we met up with last time. Nagesh is a very practical person who has learnt from the tough times in his life. Nagesh, just like any other human being, has dreams of buying a car, a big house for his family, but realises that he will only be able to get there in stages as his current earning capacity is too limited. He has been keeping his desires in check while continuing to save regularly and investing a part of it in shares of good companies. Nagesh bought a car last month by selling part of his holding in Zee Telefilms (about 100 shares @ Rs3500 that he had bought over a year back @ Rs100).

Manish has been Nagesh?s colleague for the last four years. Manish believes in living life king size. In his very first year he exceeded the credit limit on his credit card. He has been paying through his nose, shelling out interest at 3% per month on his credit card outstandings. Two

years back, he availed of a car loan to buy a Maruti 800, at a monthly installment of Rs8000 when his post-tax salary was just Rs14,000! Last year, envious of Nagesh?s newfound wealth in shares, he decided to dabble in shares too. His broker recommended Blue Information Technologies Ltd. as a hot tip that would double in 3 months? time! Full of fervour, without even checking the background of the firm, Nagesh pledged his wife?s gold and borrowed to buy this stock at Rs150. A week later, he discovered that the stock had fallen 35% from his purchase price. When he called up his broker, he was aghast to find out that the stock had been suspended. His interest meter was ticking on the money he had borrowed while his principal was down the tube. Talk of the power of compounding!

Moral: Never stretch borrowings to invest in the stock market. Shares are long-term investments that cannot be matched with short-term borrowings. Ideally, one should repay all borrowings and then invest the surplus in equities. So, when we are debt free, we are ready to invest in equities! By the way, one is never too old or young to invest as long as one understands the investment one makes.

OK, we have understood that in the long run equities offer the highest returns. We have also learnt that one can invest in equities any time provided one has surpluses after repaying debt and meeting one?s expenditure! But how much do we invest?

How much depends on two criteria. One, the risk profile of the investor and two, the liquidity requirements of the investor! Now that we know Nagesh, his father and friend Manish well, let us understand this better through their actions.

Risk profile! Yes, let?s face it. No equity investments are free of risk. There is no such thing as a free lunch, mind you! There are a whole basket of risks to contend with and we will understand all of them very soon. For now, we need to appreciate that there are risks of losing. Looking at our three personalities, we can straight away rule out Manish. He can?t afford to take any risks as he is buried deep in debt and can?t afford to lose a penny! Nagesh on the other hand is just 35 years old and has a long bright career ahead of him, so he can afford to take greater exposure in equities and in slightly risky shares too (for instance, some stocks from our ?Emerging Star?, ?Ugly Duckling? and ?Vulture?s Pick? categories). Nagesh?s father, on the other hand, has retired and has no source of income other than the savings he has amassed. So he will be able to afford very little risk. Hence, he should be looking at stocks in our ?Evergreen? or ?Apple Green? categories to choose his investments (which is why, if you remember, Nagesh had suggested HLL to his father).

Let us now move on to liquidity. Liquidity requirements signify the need of cash to meet one?s payment obligations (and don?t have anything to do with human beings? fluid intake). Manish needs all the money he can get as he has to meet so many of his loan obligations. Nagesh on the other hand has an idea of his monthly expenses so he has a better fix on his monthly cash requirements. He also needs to maintain a certain amount of cash in liquid savings (savings bank deposit, etc.) just in case there are some unforeseen medical expenses to meet or an unplanned

visit to his father?s place. Beyond these requirements, he can look at investing in equities. Nagesh?s father, on the other hand, has to meet his entire expenses from his savings and would have large requirements for immediate cash. Hence, he can allocate a smaller portion of his savings to invest in equities.

Judging the actions of the small world of people we know, we have realised that risk profiles vary with age, current financial position, even one?s own personality. Liquidity requirements too depend on similar factors. These two criteria will be different for different people, but one should not lose sight of one?s risk profile and liquidity requirement while investing in equities.

Next time around, we will try to understand what we buy when we buy equities!

Article 2: Equity means ownership

(It means returns are yours. But so are the risks. So you got to understand the business)

You have come a long way. We?ve already been through issues such as the need to invest. You also know when you are ready to invest. Now it is time to understand what we exactly buy when we buy equity.

So what we now need to figure out is how to evaluate which company to buy. I?m afraid this is where all those fancy sounding valuation tools come in? PE, RONW, ROCE, EVA, etc. Hey, hang on, it?s not as bad as it sounds. Stick around and we?ll demystify all the above in a jiffy.

But before you get into the complexities of the various valuations tools you can use and how you calculate them, we must table a fundamental principle:

?Investing in equities is akin to owning a business.?

Let?s now explore the full ramifications of this principle.

When you put your money in a bank deposit, you take a risk (albeit small, depending on which bank). In return, you get paid a small interest.

The bank takes on a higher degree of risk and lends that money at a higher interest rate to some businessman, or to a credit card holder who wants to buy a diamond ring for his wife. The bank

pays your interest out of the money he earns from the businessman. Or the doting husband.

Whereas, when you buy shares in a company, you are not lending money to the company. By providing capital for the company, which is represented by an equity share, you are participating in the ownership of the company. Clearly, your risk is much greater in this case. Because, in this case, you are entrusting the company with the job of managing risk for you.

Relatively, the risk in lending to a bank is limited. For one, most of our neighbourhood banks are nationalised. So bank deposits are perceived to be backed by the government. There is little soul searching to be done as to which bank to choose. Even in doing so, the highest priority is accorded to a Nationalised Bank purely on the safety parameter. Obviously, when you invest in equities, even this notional sense of security, of a government standing guard over your money, isn?t available to you.

What kind of business would you like to enter?

Let?s look at this another way now. Let?s assume you want to invest your money into a business. How will you decide what kind of business to enter?

For starters, it should display the potential to earn you a return in excess of what the prevailing rate of bank interest is, right? Now you need to ask yourself what would be the essential factors in determining this return. And apart from the return angle, what qualitative factors should you be looking for?

In the long term, we all look for security. Business, being an entity, is also entitled to aspire for the same. The ideal business would thus have to have horizons where profits can be sustained. Like we mentioned above, there are external factors that determine the direction and growth of the activity. All this would need to be factored into a business plan that would have to sustain itself and grow over a period of years. Of course, on an ongoing basis, we would definitely have to get a feedback on the success of the business. Operations would have to be evaluated from market feedback, while the financial statements would give a view of the profitability of the concern.

The same concepts apply to stocks

Now, here?s the punch line. Everything we discussed above doesn?t apply only to running a business. The same concepts apply, even if you just own shares in the company.

We all know of a document called an annual report. This document is the most basic source for information available on the company?s operations. In the annual reports, the directors dwell, at times in length, explaining the nature of operations and the external environment surrounding

the business and how it affected the company during the year.

If you take the additional effort of finding out the positioning of the company?s products in the marketplace, it would give a fair idea of the company?s reputation in the field it operates. All this with the objective of figuring out how stable the company?s operation is.

The company?s progress can be tracked periodically over close intervals of 3 months. This is through quarterly financial statements, the publication of which has been made mandatory by the regulatory authorities.

Next comes the question of management issues. The common question that pops up in this context is: ?How do I externally control the business if I do not have a say in the management??.

Ok, let?s assume that you are now running the business you chose. Can you, a single individual, handle all functions of the company? For a while, maybe. But once growth sets in, it would be humanly impossible to manage all the functions of an economic activity, viz. marketing, finance, procurement, etc. That?s when your business will need to morph from outfit to organisation status. Wherein the various functions are distributed across individuals, and finally the same is translated into a unified activity.

Similarly, as a shareholder, you end up delegating authority to others to run the organisation you have a stake in. Imagine Mr Narayana Murthy (Infosys), Mr Dadiseth (HLL) and Mr Anji Reddy (Dr Reddy?s) reporting to you. That?s exactly how the cookie crumbles.

The company whose equity base you have participated in is answerable. To you, as well as other shareholders of the company. Thus, while you as a joint owner have delegated the operations of the company to the professional managers and the employees, the management in turn is responsible to its shareholders. The management communicates through the balance sheet and the AGM, where shareholders voice their opinion on the performance of the company.

Infact, shareholders can actually participate in constructive criticism of the operation of the company.

What we brought you today was the first step in how to investigate and understand the qualitative issues in a business. We will be taking up the statistical part of our adventure into evaluating stocks in Valuing Equities.

Article 3: Dividend: the unsung hero

(Ignore that paltry dividend cheque at your own peril)

Article-1:Dividend: the unsung hero

During bearish times when the Sensex plumbs new depths and the entire market looks like a discount sale, it is natural to doubt the basic assumption that investing in equities really pays off. We have come across stories with bold headings carried by newspapers and magazines:

> **Equities do not fetch good returns in the long run**
> If you had invested in 100 shares of Tisco in the beginning of 1991 at Rs110 per share, you would have realised only Rs130 per share after ten years?.

We are not here to make a case for investing in equities for the long haul. We are here to just spare one moment to look at stories like these to see if it is all too simplistic or if we have missed out something.

Imagine we actually bought 100 shares of Tisco in 1991 and held on to it till 2001. Would we have received anything for holding these shares during this period? Of course, yes! We would have received dividends every time the company's board declared one.

How much would we have received in case of Tisco during this period?
We just checked the company's dividend payout record during this period and figured out that we would have received Rs25 in all for every share held. True that according to the study, from one particular day in 1991 to another day in 2001, (on a point-to-point basis) Tisco could have appreciated by just Rs20. However, any investor holding on to the stock during the period would have realised another Rs25 in the form of dividends. Hmm! More money from stock dividends than from appreciation in stock prices.

Dividends did make a significant difference
Of course we could debate whether it still made returns better et al. There are arguments and counter arguments. After all, one needs to stay invested in good businesses at right prices. Tisco hit a high of Rs300 plus in 1995, that was 300% in four years. But we are not here to prove a point.

We are here to recognise an unsung hero--Dividend!
Dividend is any payment made out of the profits of a company and approved by its board of directors. Most stable companies have a higher dividend payout whereas many growth companies retain profits to sustain their growth rates. However, in no way are dividends insignificant.

Remember "power of compounding" ? It transforms the seemingly insignificant dividend inflows into a very significant inflow. Here is a simple illustration.

For a moment, allow us to indulge in an exercise similar to the Tisco example above, a mere point-to-point comparison of the price of the HLL stock over a period of seven years, from end-1993 to end-2000, to understand our unsung hero better. J

An investment of Rs1,000 in HLL at the end of 1993 would have been worth Rs3,570 at the beginning of 2001, ie a 20% per annum compounded rate of return over a period of seven years.

Comparison of returns on HLL investment between end-1993 and end-2000

Period	CMP of HLL	Investment	Org#Sh	DPS	Dividend Reinvested	Addln Sh	Tot #Sh	With Div	W/O Div?
Dec - 1993	58	1,000	17	2.27	0	0	17		
Dec - 1994	59	-	17	3.48	39	1	18	-	-
Dec - 1995	63		17	4.40	0	1	19		
Dec - 1996	81	-	17	10.24	0	1	20	-	-
Dec - 1997	138		17	13.92	0	1	21		
Dec - 1998	166	-	17	19.86	0	2	23	-	-
Dec - 1999	225		17	29.01	0	2	25		
Dec - 2000	210	-	17	35	0	3	28	**5,948**	3570
							CAGR	29.01%	19.94%

Note: CMP = current market price; Org # Sh = no of HLL shares Rs1,000 could buy in December 1993; DPS= dividend per share; Addln Sh = more shares of HLL bought with the dividend payout every year; Tot # Sh = Org # Sh + Addln Sh--the total outstanding investment in HLL; With Div = money/ returns made by reinvesting dividends; W/O Div = money/returns made without dividend reinvestment.

To add a twist to the tale enter our unsung hero?
Let us assume that we reinvest the entire dividend that we get every year on our HLL holding to buy shares of HLL again. So in our case, the 1993 dividend payout would help us buy one more share of HLL. The 1994 dividend would help us buy another share of HLL and so on. Any

guess on how much extra we would make?

How does a mere 50% improvement in returns sound?

Yes, 50%! Our investment of Rs1,000 at the end of 1993 would be worth Rs5,948 at the beginning of 2001, ie a 29% per annum compounded rate of return over a period of seven years! Almost double the money we would have made on our investment if we'd realised only the appreciation in the stock price.

If we borrow our learning from "Power of Compounding" and stretch the horizon, then the heroic act of "dividend" hits us really in the eye.

In a very simple manner, Rs1,000 turns into Rs95,000 (95 times) if HLL price continues to compound at 20% per annum for 25 years. On the other hand, Rs1,000 transforms into Rs6,00,000 (600 times) if the rate of return improves to 29% because of dividend reinvestment over a period of 25 years.

If our investment horizon is 25 years and we decide to make the seemingly paltry dividends that we earn work for us by reinvesting them, we might actually make six times more than what we would if we didn't reinvest the dividend every year.

Did we read somewhere that tiny drops of water make a vast ocean? In the long run, investments in stocks are attractive as much for the dividends they pay out as much as for the appreciation in their prices. It is no coincidence that in both the cases (Tisco and HLL) we saw the returns double when reinvestment of dividend was taken into account. So the next time your company declares a dividend, you know exactly what to do?

Article 4: Equity, thy name is enigma

(Why equities? Because the oft-misunderstood equities offer the highest returns in the long run.)

If one were to conduct a survey to determine how people saved for their retirement, one would typically get the following responses...

?I put my money in NSC, post office schemes; they double in seven years!? (By the way, HLL in the last seven years is up seven times!!)

?I am too lazy, I leave my money in term deposits with the bank!? (Certain to retire as a pauper!)

?I am clever, I keep deposits with finance companies and co-operative banks. I make upwards of 20%.? (He forgot to mention that a few of them are like CRB! Forget the returns you will not even get your principal!!)

A very rare response would be: ?I invest in equities. I bought Infosys @ Rs500, Zee Telefilms @ Rs220?? (Anybody cares to do the sums for him?!)

Equities, or shares as they are popularly known, have been an enigma for most people. A majority of the middle class in India considers it akin to gambling. A majority of the rest is fascinated by the volatility and the short-term money-making opportunities and misunderstand equities to be a ?get rich quick? scheme. There are very few people who understand that equities offer the highest returns in the long run, adjusted for inflation or even otherwise. Take the case of Nagesh...

Nagesh has had a very conservative upbringing. However, he moved out of his home to pursue his higher studies and his eyes opened! He has been working with a leading MNC as a marketing manager. He has been wisely investing in shares for the last five years, relying on his broker?s advice after doing his own homework. On the other hand, his father worked all his life in a PSU and put all his savings in NSC and Life Insurance. He has retired today and has just realised that all his lifetime savings cannot help him lead a comfortable retired life. Nagesh is now trying to help his father out...

Nagesh: Appa, even now it is not too late. You must invest a portion of your savings in equity. You are getting disheartened because you want to live off the meager interest earnings on your savings. If you put a portion of the money in, say HLL, your money will double in 3 years, quadruple in 5 years!! Appa, equities have the ?power of compounding that is unmatched?.

Appa: Equity is very volatile. After you told me last time, I have been tracking the Sensex on Star News. It goes up two days then there is some political uncertainty and it falls. Sometimes it falls without any reason or otherwise goes up 15% in four days. I cannot handle it. At least here,

my principal is safe and I get a fixed return.

Nagesh: Appa, if you use the same Sensex as a benchmark, then the index was 1220 in September 1990 and currently trades at 4800 in September 1999, up four times in 9 years! Even if you had put in money at the height of the market frenzy in 1992, you would have still made money. The market benchmark is just an indication; the concept is to invest in specific good companies. Think Company, Appa, and don?t let the short-term market volatility scare you! In September 1990, HLL was trading at Rs115, while it trades at Rs2500 levels now! 22 times in 9 years!!

Appa: Even then, why put my savings in risky equities?

Nagesh: An equally important thing to understand is: ?Why does one save?? One saves because the productive span for any human being is a small portion of one?s entire life. I may live for 80 years but I can only work between the ages of 24 and 60. Hence, it becomes important during our productive lives to earn surpluses and save them for the period when we can?t be productive and earn. Having said that, Appa, you would also recognise that it is important to retain the purchasing power of our savings. In other words, we all know that we used to purchase grains at Rs2 per kg 5 years back, while we pay Rs10 per kg for the same now. The price will keep on increasing as the population living off a fixed area of land increases. Hence, it is also important that whatever we save now at least fetches us an equal quantity when we retire...have I lost you?

Appa: No, I was just thinking. You are right. I deposited Rs10,000 seven years back in NSC and I just got Rs20,000 now. Seven years back, I used to get vegetables for Rs25 and it used to last for a whole week and then we were four of us. Today, I buy vegetables for Rs100 and it barely lasts for a week though there are just the two of us!

Nagesh: Exactly. That?s why people used to buy gold and land to protect their savings from inflation. However, those were the days when communities were small and agriculture was the only activity. As population grew, needs grew and there was a compelling need to improve efficiency. Hence, factories came up to exploit economies of scale. To cut a long story short, investment in productive assets is the best way of preserving savings and creating wealth. Equity is the most productive asset.

Appa: What is the connection?

Nagesh: Equities or shares represent ownership of businesses that own productive assets like plant & machinery and intellectual capital to produce more goods. On the other hand, when you put money in deposits or lend directly, the money ultimately finds its way to purchase productive assets as companies borrow to fund their business! Just like we save to take care of our retirement, productive assets are created to meet greater demand for goods in the future, because of increasing population and its ever increasing needs. Who ever borrows to fund the asset hopes to make more money on his equity than what he pays for on his borrowings. So,

savings in deposits or any other fixed income instrument is sub-optimal! Hence, intuitively too, equity has to make lots more money in the long run than any deposits, because there will be no borrowings if the equity owner realises lesser money!!

Appa: All that is fine. But some companies don?t do well?

Nagesh: Obviously they are risky as certain businesses find the going tough. But collectively, they are not only very essential but very profitable. Hence, the returns on equity are always higher to compensate for the additional risk. Risk is a part and parcel of life. There are so many bus, rail and two wheeler accidents, but that doesn?t mean that we prefer to walk everywhere. Even if we decide to walk, we run the risk of being hit by another vehicle! One should only take care to invest in the right businesses, which have assets capable of earning good returns. Hence, these will have to be businesses that have a bright future. Nobody thinks of buying a bullock cart now!...

The discussion went on for some time. Nagesh?s father was last spotted opening an account with a brokerage house. We checked with the broker and found out that he had made his first purchase of equity?200 shares of HLL?at the age of 62!

Chapter 3: Equity Risks

You've heard it before: nothing risked, nothing gained. But what is risk?

Article 1: *Khel* risky *hai*

(Some risks pertain to the market as a whole, some to specific companies)

While reading through the past learning pieces, did you ever say to yourself: ?Such huge returns? Too good to be true. There must be a catch somewhere.? Or did Nagesh?s father?s apprehensions regarding market volatility and concerns over companies faring badly unsettle you? Did our reference to equity risk, ?no free lunch? and risk profile leave questions unanswered? We sure hope it did, because understanding risks associated with equities and learning how to manage them is the key to achieving higher returns from equities. Remember, the most important features of a fast car are the brakes and the steering wheel?not the accelerator! We begin our own humble attempt to understand this monster that can gobble up all our hard-earned returns!

Why have equity prices fallen in the past?

- Whenever governments have fallen; political instability (Top-of-the-mind recall)
- Inflation hitting double digits; rupee falling; interest rate hikes (the knowledgeable will tell you these are broad economic parameters that affect all businesses)
- A lot of people will tell you that wars have spooked the market?Gulf War, Kargil crisis, etc (country and lives are at stake.).
- Scams!! (Human greed knows no bounds).
- Bad management interested in making a quick buck themselves
- Company?s products bombed (Bad luck, bad strategy or bad marketing?).
- Lakshmi Machine Works suffers as textile mills are not doing well (a case of a specific sector going bad that wipes out even the best of companies).
- A chemical company?s plant caught fire destroying it completely (God save us!)
- A brilliant product but the company?s borrowings strangled the product before it saw the light of the day (Debt leads to death!)

So many of them, you ask? Let us see if we can classify them into broad categories. If you look at these reasons in detail, you realise that there are some factors that are within the company?s control or specific to the company?s business (bad management, products bombing, sector downslide, fire, borrowings?). The rest of the factors (politics, macroeconomic issues and wars) affect the market in general.

OK, we seem to have got two watertight classifications for equity risk. One affects specific companies and sectors. Textbooks have various names for it??diversifiable risk?, ?unsystemic risk?, ?business risk?, ?company risk? and so on. The other set of risk affects the entire market?? undiversifiable risk?, systemic risk?, ?market risk?.....

The amazing power of classification! Suddenly, our big list of risks looks manageable. We just need to understand which basket they belong to! To get the classification right, let us delve a little deeper into the two groups. We will take up the ways and means of tackling these risks in our next session (lest we suffer from overload).

Company risk: a closer look

Though company risk is specific to the company, some risk factors that affect the business are within the control of the company. Corporate India is replete with instances of how a company could have controlled its future better.

Real Value?s (the ?Ceasefire? company) ill-conceived foray into ?vacuumisers? is an example of strategy going haywire. There are hazar Indian promoters who have siphoned money from their listed companies?examples of bad management. Core Healthcare (earlier Core Parenterals) is another classic example of a company that had the right product but, in its urge to build mega plants, it borrowed beyond its means before creating a market?the rest is history (the company got into a debt trap, and the product became a commodity).

All these risks can be avoided if proper homework is done to understand businesses and make a future looking call on their businesses. Only stock-picking skills can see you through this maze of risks. Now you know why good research analysts are so sought after!

The other sets of risks that are business specific are beyond the control of the company. What can Madras Cements do if the cement market suddenly slumps as there is too much new capacity with no matching demand! What can TNPL do if demand for newsprint falls as more and more people take to reading newspapers on the Internet! (Not now! But it can happen 10 years down the line) What can Tisco do if Posco dumps a million tons of steel in the country (not literally!)!

Of course there is something that these companies can do to rework their strategies, but it is time consuming. And you know our stock markets! The prices will get hammered with the first waft of bad news. In any case, if one were to diversify one?s holdings across various sectors and companies, the risks can get minimised to a certain extent. Risk diversification is another useful concept to understand, which we will take up next time.

Market risk

Company risk is still easy to contend with, but what do we do about market risks? Out of the number of factors affecting markets, our experience tells us that market declines under many of these factors are temporary and provide excellent buying opportunities for the patient investor who thinks and buys good companies (We love this kind of an investor or company)

Market risk is a different animal altogether. Diversification does not help as all stocks get affected by these factors. But fret not, the native ingenuity of mankind has found solutions to this problem too, in the form of ?Futures? & ?Options?.

We will be writing soon about the mechanisms behind such high-sounding terms and how you can use them (whenever they start here!)

Article 2: Taming the risk

(Risk is known to be a party pooper. We know that risk will always exist. Which is why we need t...)

Welcome once again! Our preparation for the exciting journey into the adventurous world of equities has progressed to the next grade. In case you are joining us now, don?t lose heart. We will take you through a whirlwind tour of what we have learnt so far. For those of you who have been with us all through, it will be a good time to reflect on the key points. You will be better prepared to brave the adventure and emerge victorious.

We began by understanding the necessity to invest for growth, the necessity to beat inflation and retire wealthy. Our adventure began the moment we discovered that equities are lucrative. Not exactly! No adventure can be successfully undertaken before understanding the basics.

We figured out that the most important criteria to qualify for the journey is to be debt-free or, in simpler words, how much surplus we have after paying off all our obligations. We also understood a very important concept. Building of equity investments depends on two criteria:

1. Everybody can?t take the same level of excitement (Risk Profile)
2. Individual cash requirement (Liquidity Requirement)

Then came the party pooper?Risk. The outside chance of losing instead of gaining. In our attempt to understand risk, we classified risk into ?Controllable Risks? (also called ?Company Risk? or ?Diversifiable Risk?) and ?Beyond Control Risks? (also called ?Market Risk? or ?Undiversifiable Risk?). Wake up! We know that ?risk? will always exist. Let us learn to tame it.We use a clich?o reinforce an age-old truth: ?Don?t put all your eggs in one basket!? Spread it around so that if one basket were to drop, only a few of your eggs break! Equally important is to decide: ?In which basket do I put my eggs in?? We will take this up in our next leg of preparation. Remember, we hope to make soldiers out of you! Let us understand our monster better?Equity Risk. Try answering this question below. For the uninitiated, ?Long? stands for a bought position in stock

while ?Short? stands for a sold position in a stock that is not owned.

Which of these options do you think is very risky? Which one is the least risky?
1. Long SAIL
2. Long SAIL & Long TISCO
3. Long SAIL & Long HLL
4. Long HLL, Long TISCO, Long ACC & Long Infosys

Let us look at all these four choices?

Choice #1-Long SAIL (our PSU steel company). I am exposed to company-specific risks (inefficient manufacturer, bureaucracy...). I am exposed to the steel cycle too (what if steel prices drop 5%?). To top it all I am exposed to the market risk (Vajpayee government?s fall takes the Sensex down 200 points. Want to know my SAIL price? It has hit the lower circuit!) Gosh! I am exposed to every conceivable risk.

Choice #2 - Long TISCO & Long SAIL. Tricky hey! Two biggest players in steel. As far as company specific risks go, TISCO is a better bet then SAIL. So I am better off. Steel sector downtrend affects both of them. However, since TISCO is a more efficient producer, he will do better than SAIL. So I am better off. However, as far as market risks go, both of them get affected anyway. So I am indifferent. Adding it all up, Choice #2 is definitely better than Choice #1.

We have learnt our first key learning. In choice #2 I had two stocks. I diversified. Voila! The risk reduced! So, diversification helps reduce risks!

Choice #3- Long SAIL & Long HLL. SAIL is a steel company whereas HLL manufactures soaps, detergents?products that human beings will always use come rain or shine! These two companies are in different sectors. If the economy or steel sector does badly, I lose out on only one half of my investment! HLL is a well managed company, so I am better off. Hey, I am much better off than my earlier choice. I have split my risks between two unrelated companies and sectors. What about market risk? SAIL has a lot of sympathy with market movement whereas HLL is very stable (People can?t stop taking a bath just because the Sensex has been down for six months! Whereas people will stop buying cars and car companies will stop manufacturing and hence, steel companies will not be able to sell their steel!!)

Choice #3 is excellent!

We have learnt our next key learning: Equity risk is not additive!

SAIL will have a certain risk on its own while HLL will have another one. But if we have the two of them together, then the risk of this basket will not be risk of SAIL plus risk of HLL. Remember, if SAIL is going down, HLL will not be as money flows to the safe stocks. Similarly, when the going is good, SAIL will outperform HLL.

Choice #4 How all of us would give our right hand to own it! All these four stocks are leaders in their sectors. The sectors almost cover the entire spectrum of the market. At least two of them will be doing well. Any guesses on where it stands on our risk spectrum? Obviously, it is our first choice as it is the least risky.

Another lesson: **More widespread the selection of stocks, the better diversified and less risky a portfolio becomes. As the number of stocks increase, risk reduces.**

All these instances of diversification were able to bring the ?diversifiable risk? under leash. However, there is another kind of diversification that can take care of the more crazy ?market risk?! A combination of long and short positions!!

Long HLL and Short SAIL. What have I achieved?
Let us look at company risks. Since, I hold HLL I own the company risk whereas if SAIL goes bust because of a company-specific risk, I gain because I have already sold it. With respect to market risks, if the market goes down, SAIL goes down more than HLL so I don?t lose money at all! In short, by using this combination I have only taken company-specific risk. A risk that I understand and can control.

These kind of combinations of long and short positions are used to mitigate market risks. Even the uncontrollable animal can be tamed! Market men call this ?Hedging?. ?Futures & Options?, which we will discuss later, facilitate this better.

Now we know how diversification helps reduce risks. Did anyone bother to ask: ?What about returns?? Well, the clever ones among you would have figured out that by limiting our downside, we have parted with a bit of the upside! So there is a trade-off. Achieving the right balance between risks and returns is the key. Laws of nature apply here too??Strike the right balance?. We will try to take up optimisation or maximising returns for a unit of risk very soon.

Article 3: Risk: the time element

(How likely is it that you might trip and fall in the next half an hour? In the next two weeks?I...)

We all know that 'company' and 'market' risks are the hazards that any equity investor faces, right? Wrong. Risk has another dimension - that of time. Time plays a role that is often not very obvious to us in the stock market. To explain this facet of risk let me give you a simple example.

How likely is it that you may trip and fall in the next one second? How likely is it that you might trip and fall in the next half an hour? How likely is it that you might trip and fall some time in the next five years?

Get the point? You can say with 100% certainty that you will not trip in the next one second. You can also, perhaps with the same degree of certainty, say that you are unlikely to trip and fall in the next half an hour. But the degree of certainty would definitely reduce over a five-year time frame. And further still, over a 10-year period.

That in other words, ladies and gentlemen, is the time element of risk.

Risk increases with time

Arguably, the time element of risk is very often part of company risk or market risk. But the reason we would like to focus on this element separately is that this is an element of risk that is not understood very well. Neither is it given the place of prominence that it deserves.

This is particularly true of what we call 'growth' stocks. Stocks that you buy because you think that they will grow phenomenally over the next few years. 'Growth' investing has been the most popular and successful form of investing in recent years. Stocks from the technology, media, telecom and biotech sectors are prime examples of 'growth' stocks.

These 'growth' stocks look expensive by conventional metrics - price-earning (P/E), price-book (P/B) and economic value (EV). But even after the recent meltdown in the past three months these stocks have handsomely rewarded investors who bought them 2-3 years ago. Despite, as we said, being overvalued based on conventional metrics even two years ago.

In the words of the legendary investor and thinker Benjamin Graham: 'The successful purchase of growth stocks requires two rather obvious conditions - first, that their prospect of growth be realized; and, second, that the market has not already pretty well discounted these growth prospects.'

Let us presume that the second condition (which continues to be debated to death) is not true - the market has not already discounted these growth prospects. So then, the only other condition that needs to be met is that the prospects of their growth need to be realised.

This is not as simple as it seems

And the obvious numbers that we look at do not tell the whole story. *'Infosys ka EPS agle saal 100 taka bad jayega'* is the typical refrain that one gets to hear. Now we are no slaves to conventional metrics and are willing to be completely open minded.

But is it okay to buy Infosys at a P/E of 180 only because it will grow at 100% in FY2001? The answer is a resounding NO. If buying Infosys at this price is to be a profitable proposition for you, then Infosys must grow at a scorching pace not just next year but for many years beyond that.

The risk in owning Infosys comes from time. The risk is not whether it will grow at 100% next year, but whether it can grow at a compounded annual growth return (CAGR) of 50-60% over the next five years. Not an impossible task for a company with an impressive track record.

But look at the size of the challenge. A 55% CAGR over the next five years means a forecast of Rs2500cr profit in FY2005. That is more than what big daddy Reliance makes by way of profits currently. At today's price (Rs7870) that would place Infosys at a reasonable P/E of 20 times its FY2005 estimates. That is a P/E that many companies (including Reliance) are not getting even on their FY2000 earnings currently.

But that is another issue altogether

What is relevant to you as a buyer of Infosys shares is that the company cannot afford to trip and fall anytime over the next five years. Now what degree of certainty would you place on that?

Before you jump to any conclusions, it's not as impossible as it may seem (as our analysts are at pains to point out). After all, this same company reported a profit of just Rs13cr in FY1995. Would you have (in 1995) estimated that it would, in five years, grow to report a profit of Rs285cr? A twenty-fold jump!

Our objective in highlighting Infosys is to underline the time element of risk. We are aware of the risk and have chosen to take it because we have confidence in the management of this company and believe that its strategy and business model will enable the company to get there. Those who took this risk in 1995 have been amply rewarded.

Many people would dismiss this entire concept of time element of risk on the premise that if Infosys is going to double its profits this year, then so will its price and, hence, they can dump the share within six months and make money. To them we suggest that they consider the second condition listed by Benjamin Graham: '?that the market has not already pretty well discounted these growth prospects.'

Who does not know by now that Infosys (profits) will grow by 70-80% this year? Anybody with access to a decent broker or CNBC knows that by now. By that count its growth prospects for this

year are pretty well discounted.

The reason why there is still money to be made from buying Infosys is that its growth prospects for the next five years are not discounted. Not everybody attaches a high degree of probability (or the same degree of probability) to Infosys reaching its destination in five years time. That is why those who take the risk (of time) will be amply rewarded.

As an equity investor you must ask yourself this question every time you buy a stock. What is the time element of risk that I am taking? This is particularly true of buying 'growth' stocks.

Article 4: A calculated risk

(Risk is a choice rather than fate. Equity risk premium is the "reward for holding a risky inves...)

Only those who risk going too far can possibly find out how far one can go
- T.S.Eliot

'Investing is risky business'

We have all come across this statutory warning or have learnt it the hard way while investing in the stock market. Let us take a step back to understand what is 'risk'.

The word is commonly used to describe *the chance of a loss*.

Chance: the Webster Dictionary defines this word as 'something that happens unpredictably without discernible human intention or observable cause' In other words, risk in the financial context stands for the uncertainties associated with future cash flows.

We have learnt earlier how savings transform to 'Risk Capital'. We have taken a hard look at equity risks and figured out that 'Khel risky hai'.

But did you know that 'Risk' owes its origin to the Italian word risicare that literally means 'to dare'? Risk as a verb is used to imply 'taking the chance'. In other words, as Peter Bernstein observes in the introduction to his magnum opus 'Against the Gods',

'... risk is a choice rather than a fate. The actions we dare to take, which depend on how free we are to make choices, are what the story of risk is all about. And that story helps define what it means to be a human being...'

If 'risk' is all about choices, it is time to know how to factor this in our investment decisions.

Let us learn how these choices are made from the actions of Mr. Savvy Investor. Needless to say he is the smart guy who makes the smartest choices when it comes to investing.

Mr. Savvy Investor has Rs1,00,000 to invest. He has two investment options.

The first option is a government bond that pays an interest of 10% per annum for the next three years.

The second option is investing in a particular stock. A leading analyst expects this stock to go up by just 2% in the first year as the company is still expanding capacity. But he expects the stock to gain 28% in the next two years.

Mr. Savvy Investor fishes out his pocket calculator and gets down to business.

The bond option is fairly easy to calculate. His Rs1,00,000 investment would be worth Rs1,30,000 in three years. In other words, it would fetch him a return of 30% in three years.

He works out the returns for the second option.

His investment would be worth Rs1,02,000 at the end of the first year. A gain of 28% over the next two years means that his investment would be worth Rs1,30,560. Thanks to the 'power of compounding. his 2% gain in the first year will earn a return too. In the end, he would earn a 30.56% return in three years.

Two investment options with almost the same returns in three years. Which option does Mr. Savvy Investor choose?

Our Mr. Savvy Investor chooses to invest in the government bond.

It is easy to figure out why Mr. Savvy Investor has chosen the bond option.

Though investing in the stock meant marginally higher returns. There were lots of uncertainties. Remember, investment in the stock is based on expectations, expectations of a leading analyst, in this case. On the other hand, the government bond gives a fixed return with no question of a default.

What if the analyst got it all wrong? For all you know, a competitor might increase capacities and kill the market in the second year. Hence, the expected 28% appreciation might actually turn out to be a decline! As Murphy's law states 'If anything can go wrong, it will go wrong'.

Hence, Mr. Savvy Investor does not even bat an eyelid while deciding to invest in the government bond.

Let us now add a twist to the second investment option and see if it makes a difference to Mr. Savvy Investor's choice.

The leading analyst expects the stock to go up by 12% this year as the company has finished expanding its capacity six months before time. He also expects the stock to gain 28% in the next two years.

Mr. Savvy Investor does his calculations to figure out that his investment, in this case, would fetch a return of 43.4% in three years. A good 13.4% more than the government bond.

Like earlier, the uncertainties still remain. However, since Mr. Savvy Investor earns 43.4%, he can still take the chance. If the stock fails to go up by 28% in the next two years and instead goes up by just 17%, he will still make a return of 31%! In other words, the higher return provides a margin of safety.

Hence, the higher rate of return over the government bond for the same period makes Mr. Savvy Investor prefer the second option of investing in the stock.

What made him go for the second option?

The 13.4% extra return over the government bond. This 'extra return' that induces our Mr. Savvy Investor to choose the more uncertain investment option is called 'Risk Premium".

A financial textbook will tell us that

Risk premium is the 'reward for holding a risky investment rather than a risk-free investment.

The extra return that the stock market or a stock must provide over the risk-free rate of return to compensate for the market risk is called "Equity Risk Premium".

In case of Mr. Savvy Investor, the extra return of 13.4% over the risk-free 30% rate of return on the government bond defines his "equity risk premium"

How do you determine 'equity risk premium'? What is the right premium to settle for? What is 'Beta'? More of this next time as we brace ourselves to risk the stock market and brave the uncertainties.

As one great statistician wrote, "Humanity did not take control of society out of the realm of Divine Providence...to put it at the mercy of the laws of chance."

Article 5: What is right risk premium?

(We've understood the concept of "risk premium". Let us now see if "risk...)

Risk is not always a bad thing
What is the second thing that strikes your mind when you hear the word 'equity' or 'stock'? (If 'risk' is the first thing that flashes across your mind, then you seem to have had an overdose of emphasis on risk in our recent school write-ups. Maybe it is time for you to learn more about how stocks offer great returns over the long run and the 'power of compounding'.)

If 'risk' is the second thing to take the dias, you are ready to take the next few steps in understanding this concept better. And just in case 'risk' was the last thing to chance upon your mind, we suggest that you start right at the beginning of these series.

What is equity risk premium?

Last time we understood that though risk is the chance of loss, it is equally a matter of choice. 'Equity risk premium' is the leveller that makes risky investment options attractive. Now it is time to put a finger on 'equity risk premium'.

We saw that Mr Savvy Investor settled for investing in the stock since he expected to make 13.4% extra returns over the 30% return on government bonds in three years. In other words, equity risk premium is forward looking.

If equity risk premium is forward looking and based on expectations, how do we know that we have settled for the right 'risk premium? Or how do we know that the 'risk premium' adequately compensates us in case the returns go against expectations?

A theoretically applicable method is to look at returns associated with all possible situations. Then assign probabilities to these possibilities and get a fix on the '*expected*' return. In the end, the *expected* return needs to be compared with the risk-free return to evaluate if the 'risk premium' is adequate enough.

A little lost? Back to our good friend - Mr. Savvy Investor.

Our thought experiment

Small Cement Company (SCC), Efficient Cement Company (ECC) and Big Cement Company (BCC) are three cement companies.

SCC has small capacity and hence its earnings improve dramatically after cement prices cross a threshold price. ECC, on the other hand, has a very efficient process and hence its earnings improve sharply with any rise in cement prices. The biggest of them all, BCC, is not so sensitive to cement prices, thanks to its size. In other words, BCC's bottom line moves in a more sober manner to the changes in cement prices.

Time to make one simplistic assumption

Let us assume that the earnings of these companies are sensitive to only cement prices. Hence, cement prices determine the returns from investing in these stocks.

Mr. Savvy Investor needs to pick the best investment option from these three companies.

Luckily, a cement expert and a stock market analyst have made life for our friend a little simple.

The cement expert has assigned the following probabilities for the change in cement prices over last year. The stock market analyst has given his assessment of the *expected* returns from these three stocks for the respective changes in cement prices.

Event	Probability	Returns		
		SCC	ECC	BCC
5% decline	20%	-5%	0%	5%
Flat	30%	+10%	+10%	+10%
5% increase	40%	+25%	+20%	+15%
10% increase	10%	+35%	+30%	+25%

Mr Savvy Investor had to make a wise choice with just these details.

He calculated the average returns that he expected to make for each company. He had the probabilities associated with each return. Hence, all he had to do was multiply each probability with the associated return and add all of them together. For example, the average return that one can expect on SCC worked out to:

20%*-5%+30%*10%+40%*25%+10%*35% = 15.5%. This way, he calculated the *expected*

returns for these three companies as follows:

	SCC	ECC	BCC
Expected Returns	+15.5%	+14%	+12.5%

Do you think the choice was very easy for Mr Savvy Investor? After all, he just worked out that SCC has the highest *expected* returns.

Think again, for our wise investor has chosen BCC over the others.

To find out why, cast a glance upon the main table again. The returns on SCC can swing from -5% to 35%, an extremely volatile stock indeed, with returns moving in a range of 40% from -5% to 35%. On the other hand, ECC is little less volatile as its returns fluctuate within a band of 0% to 30% - a range of 30%.

Finally, BCC is found to be a relatively steady stock. The worst case return on BCC is found to be 5% although the best case return, at 25%, is less than the returns of the other two. Anyway, this is a comparatively small range of 20% fluctuation in return.

Factoring in volatility of return

Mr Savvy Investor made another smart back of the envelope calculation. He divided the *expected* returns for each of these stocks by the range of possible returns. Look at what he got from his crude calculation...

	SCC	ECC	BCC
Exp Returns/Range	0.3875	0.467	0.625

In other words, Mr. Savvy Investor calculated his *expected* returns for every unit range of return that the stock could swing. A neat approximation to what the statisticians will call 'deviation from the mean'. BCC turned to have the highest return for every unit of risk.

The answer became obvious to Mr. Savvy Investor- BCC was the best investment option.

Of course, he might discover that the risk premium built into the 12.5% return from BCC' investment is not a good enough premium. But that is a different story altogether.

A recap on this lesson

We will revisit these calculations later. It is time now to take stock of what we have learned about 'equity risk premium' so far:

- This premium is forward looking in nature, as it is based on 'expectation' of return.
- *Expected* returns could vary within a wide range. A higher range of return implies a higher gap between *expected* return and the actual return, thereby increasing the uncertainties associated with the return.
- We also understood that in case the range of returns from an investment in a stock is very large, then investing in the stock is more risky. However, this was a crude way of pinning the volatility of stock returns.
- After all the more likelihood of stock returns swinging from our *expected* returns, the more uncertain the actual returns we realise in the future. Look at our example, SCC returns are expected to be 15.5% but the eventual returns could swing any where from a -5% to 35% depending on how cement prices turn out.
- Statistically, the deviation from the *expected* return is a measure of the volatility of the stock returns.
- It is not enough to select the stock with the highest '*expected*' return. It is important to select a stock that has a higher return per unit of risk.

Of course, this essentially explains the concept of 'equity risk premium'. The higher the volatility or uncertainty, the higher the risk premium sought by the investor.

Getting the 'risk premium' right - the next step

Now that we understand all these concepts, how do we get around the issue of obtaining a fix on this risk? After all, everybody invests based on expectations. How can we figure out today how much the returns will deviate from expectations in the future?

Academicians have worked on evolving methods that help us approximate and get a better fix on these future uncertainties. Next time, we will grapple with the issue of getting a fix on 'risk' and demanding the right 'risk premium'.

Article 6: Chasing the elusive 'Risk Premium'

(Staring at "Equity Risk Premium" square in the face...)

Welcome to the next leg of our 'Risk Premium' journey
Having come so far in the lesson, one would assume that you have understood that the risk premium demanded by equity investors on their investment is forward-looking, as it is based on the expectation of returns. You have also understood that risk premium increases with higher volatility of expected returns.

Hence, we saw our friend Mr Savvy Investor choose an investment option, based not just on expected returns but expected returns adjusted for the risk. So, take a deep breath and think back on what trait Mr Savvy Investor was displaying when he made the requisite calculations.

He was avoiding risk! He was unwilling to take on additional risk unless he was compensated for taking that risk.

Such risk avoiding behaviour is the cornerstone of rational investing. Textbooks state that a rational investor is risk averse, and that rational investors measure reward using expected return and risk calculated as variance.

Risks borne by an equities investor

Time to take a quick look at the broad classes of risks borne by an equity investor:

As you figured out while reading "Taming the risks" , the risk borne by equity investors can be classified as two types - systemic risk, which is market risk and unsystemic risk, which is risk borne specific to a business. We also discovered that unsystemic risk can be reduced by diversifying investments across a basket of stocks representing various businesses. However, systemic risk is something that we have to live with.

Can an investor expect compensation for bearing both market and business risks?

If your answer is yes, you probably are asking for a little too much. Remember that, as an equity investor, you can spread your investments across a basket of stocks to reduce your business risk to zero. In fact, there are extensive studies that show that even a portfolio with eight stocks reduces unsystemic risk to zero. Hence, the only risk that an equity investor can demand a premium for is the systemic or market risk.

Now that we know what type of risk you can demand compensation for, how do we go about measuring it? Simple, the risk premium for systemic risk needs to equal the risk premium for the market as a whole. After all systemic risk exists because of the pervasive influence of the market.

But just the risk premium for the market is not enough

What have we missed? Let's see... Assume that a new government came to power at the Centre and the Sensex went up by 8% in two days...

1. Would you think HLL, Infosys and HFCL all went up by 8% each?

2. If you think that they all went up by different percentages, then which one do you think went up the most?

We have all seen that every stock posts different gains for the same gain in the Sensex. Stocks like HLL do not rise as fast as the market nor do they drop as fast. Infosys on the other hand posts gains higher than the market. HFCL, we are all well aware, moves sharply higher whenever the market moves higher while falling more sharply than the market in the downswings.

In other words, the influence of the market forces is different on different stocks. Hence, we cannot just settle for the risk premium commanded by the market. We need to measure how the market affects a particular stock.

The 'beta' factor

'Beta' measures the factor of influence of the market on a particular stock. Financial expert William Sharpe worked out a method for doing just this (calculating the beta of a stock). Many of you would have come across the concept of 'capital asset pricing model' or CAPM.

CAPM makes a fundamental assumption that the historic volatility of stock prices will be mimicked in the future too.

Next time, we will unravel how CAPM and beta help us get a fix on this elusive risk premium. Until then, I leave you with a thought to ponder:

Do you think a high beta stock should have a higher risk premium or a lower risk premium?

Article 7: Graduating in Risk Premium

(Crack the link between "Beta" and "Risk Premium". Master the concept of CAPM with ease...)

In case you have reached this vantage point after having understood the basics of 'risk premium', we offer you our hearty congratulations on having made such outstanding progress!

Now, picking up the thread from where we left off, investors get compensated only for the market risk that they bear. Market risk is the only risk that cannot be reduced through diversification in your portfolio (by including a set of stocks from different businesses), like business risk can.

However, the influence of the market varies for various stocks. Some stock movements are exaggerated compared with market movements while others are subdued.

We understood last time that the 'beta' of a stock measures this relative movement of a stock vis-?is the market. Hence, 'beta' measures the tendency of the stock to participate in the market movement.

Let's work this out using an example...

Hyper Ltd., Tracker Ltd. and Sober Ltd. are three stocks that trade in the stock market of Shareland. Sharex is the stock market index in Shareland. Hyper has a beta of 1.3 while Tracker has a beta of 1. On the other hand, Sober has a beta of 0.7.

First stop, what do these values mean?

Hyper's beta value of 1.3 indicates that it is far more sensitive to market movements than Tracker and Sober. In other words, if the market as measured by Sharex goes up by 10%, Hyper will go up by 13%. Tracker will go up as much as the market, i.e. 10%, while Sober gains a mere 7% in relation to the market.

Who commands the lower risk premium?
After having come so far in the lesson, we expect that you will flip this situation to its negative face and look at the situation when the stock market in Shareland drops by 10%.

In this case, Hyper drops the most (by 13%) as it has a higher beta of 1.3. Since Tracker has a beta of 1, it drops by 10%, the same as the market. On the other hand, Sober drops by a mere

7%.

A higher beta means higher risk and hence a stock with higher risk needs to command a higher 'risk premium'. And obviously, since Hyper reacts in a manner true to its name for every drop/ gain in the market, it is the riskiest stock and should command the highest premium, followed by Tracker with Sober being the least risk option of the three.

Moving on to CAPM

So if the risk premium commanded by the stock market is x%, then the risk premium that investors should demand for a particular stock is beta times x%. CAPM states that the expected return on a stock is the sum of a `risk-free rate' and `stock beta times market risk premium'.

This, in essence, is the capital asset pricing model (CAPM). After all, why should anyone expect to earn more by investing in one stock as opposed to another? You need to be compensated for doing badly when times are bad. The stock that is wont to do badly just when you need money in trying times is a stock you should hate, and there had better be some redeeming virtue or else who would want to hold it?

How is beta calculated?

Oh, we are not going to give you some longwinded formula. After all these days, you do not need to know how a computer works to actually use one. So, we shall never trouble you with formulae, but just explain the concept.

An analyst calculating the beta of a stock obtains the historical returns of that stock over a period and then compares them using 'linear regression' to the returns on the index. It is just enough for most of us to know that linear regression is a statistical tool for estimating beta.

Some pertinent questions to ask at this stage

Q: **Is the beta of a stock constant?**

A: The beta of a stock can change over time as the stock's characteristics transform. For example, a stock moving from the B1 group to the A group sometime back would have changed the beta of the stock. After all, the underlying liquidity of the stock would have changed as A group stocks have this carry forward mechanism that attracts a whole host of speculators.

Q: **Can a low beta stock be more volatile than a high beta stock?**

A: Interestingly, a low beta stock could be more volatile than a high beta stock. Remember, the

beta measures only the systemic risk or the influence of the market on the stock whereas a stock on its own might have a very high unsystemic risk because of the risk associated with the company's business.

Wrapping up today's spoils
The key insight of the capital asset pricing model is that higher expected returns go with the greater risk of doing badly in bad times.

Beta is a measure of a stock's tendency to move with the market. Stocks with high betas tend to do worse in market downturns than those with low betas.

Our advice: If your heart has a high beta level, invest in a stock that has a low beta!

Chapter 4: Annual Report Explained

(Your essential guide to interpreting a companyÆs report cardà)

Article 1: Back to basics

(Remember that booklet called Annual Report your company sends you every year?)

The profit & loss account
Introduction
If you own shares, you'll remember that the company sends you a booklet called an annual report just before the annual general meeting. Most of the time, all you've done is admired the glossy pictures before adding it to the pile of newspapers for the raddiwala.

That's a pity, because a company's annual report can be a great source of information, helping you to decide whether to stay invested in the company. At the very least, it'll help you ask some tough questions to the management at the AGM.

We know the problem. You'll be thinking that's a lot of unreadable stuff! Not to worry, accountants are in business by making it difficult for ordinary people to understand accounts! All of us can learn to read accounts. We'll show you how.

The profit & loss account
At the heart of the annual report is the Profit & Loss Account. Accountants call it the P&L account

to show familiarity, as well as to make it difficult for ordinary people to understand what they're talking about.

No company can exist for long by continuously making losses, and the P&L account shows the extent of profit or loss made by the company in a particular year. To illustrate, let's take the Reliance Industries annual report for 1998-99.

	1998-99		1997-98	
	Rs.	Rs.	Rs.	Rs.
INCOME				
Sales		**14,553.26**		13,403.78
Other Income		**607.55**		335.60
Variation in Stock		**(152.43)**		368.28
		15,008.38		14,107.66
EXPENDITURE				
Purchases		**190.32**		14.19
Manufacturing and Other Expenses		**11,500.52**		11,206.93
Interest		**728.81**		503.55
Depreciation	**1,776.66**		1,460.27	
Less : Transfered from General Reserve (Refer Note 3, Schedule 'O'){	**921.62**	**855.04**	792.95	667.32
		13,274.69		12,391.99
Profit Before the year		**1,733.69**		1,715.67
Provision for the year		**30.00**		63.00
Profit for the year		**1,703.69**		1,652.67
Add:Taxation for the earlier years		**-**		(85.67)
Balance brought forward from last year		**1,047.89**		662.79
Investment Allowance (utilised)		**-**		-
Reserve written back		**-**		36.00

Amount available for Appropriation		**2,751.58**		2,265.79
APPROPRIATIONS				
Debenture Redemption Reserve	**204.50**		64.47	
General Reserve	**1000.0**		752.65	
Interim Dividend	**23.39**		10.33	
Proposed Dividend	**350.16**		326.81	
Tax on Dividend	**40.86**	**1,618.91**	63.64	1,217.90
Balance carried to Balance Sheet		**1,132.67**		1,047.89
Significant Accounting Policies				
Notes on Accounts				

You'll notice there are two main heads - **income** and **expenditure**. Simply put, the difference between the two is the **profit** (if income exceeds expenditure) or **loss** (if expenditure exceeds income). And losses, as you know, are bad.

Income

The total income is broken down into several heads-sales, other income, and variation in stock. Obviously, a company's **sales** will be its main source of income, so that item doesn't need much explaining. A source of confusion can be the fact that sales are sometimes called **gross sales** and at other times **net sales**. The difference is the amount of excise duty paid, and net sales is merely gross sales less excise duty. Net sales is a better indicator of how much the company is selling, because the excise duty goes to the government. Clearly, higher sales help the company earn higher profits.

"Other income" is accountantspeak for all those items of income which do not relate directly to the company's sales. This could include dividends and interest received by the company from its investments, the profit on sale of investments or assets, sale of scrap and other such items. Some companies put service income, like money earned by repairing or servicing, in this category. Basically, the thing to remember is that other income is very often, but not necessarily, income from activities distinct from the company's main activity. Sometimes such other income is one-off in nature, such as the profit from selling assets. So if you want to predict the company's future income, you'll have to leave out this kind of one-off income.

The third item, **variation in stock**, reflects the fact that a company always carries some inventory, which is nothing but unsold stock on a particular date. The company has already incurred some expenditure in producing this inventory, which is reflected in the expenses part of the P&L account. So the value of the closing stock should also be included to give the correct picture of the profit. However, from this closing stock the value of the stock at the beginning of the accounting period must be subtracted, since that was included as closing stock during the previous accounting period. That sounds complicated, but just remember that the variation in stock is actually nothing but closing stock less opening stock of finished goods and stocks in process. Why not raw material stocks? Raw material stocks are not included here because there is an item "raw material consumption" in the expenditure section of the P&L account.

Expenditure

The expenditure part of the P&L obviously has purchases and manufacturing expenses. In fact, all the costs that go into making the things the company sells. But that's not all. **Interest costs** incurred on the company's debts are also included here. Further, there's an item known as **depreciation**, which is nothing but a notional estimate of the wear and tear of the equipment used by the company. The logic is that a company needs to set aside a sum annually so that it can buy new machinery when it is needed. Clearly, keeping costs in check will add to the bottomline.

You'll notice that there's something known as **schedules** against the items in the P&L account. These are nothing but more detailed break-ups of these items. For instance, in the RIL P&L account, schedule L gives details of all the manufacturing expenses, such as salaries and wages, sales and distribution expenses, expenses on power, fuel, and administrative expenses like rent, insurance, etc.

Profit and EPS

Deducting expenditure from income gives the profit before tax. When the amount set aside by the company for tax purposes is deducted, we get the all-important *net profit* figure. Adding the balance brought forward in the account last year, we get the amount available for appropriation, which is nothing but the way the profit is divided. One chunk is paid to equity shareholders as dividend, one part goes towards paying dividend on preference shares, while the rest goes to statutorily required reserves, such as the reserve for redeeming debentures, and to the general reserve, which bolsters the company's net worth, or the amount of shareholder's funds.

A last word about **EPS**, which is earnings per share. This is a figure analysts love to talk about. EPS is calculated by dividing net profit by the number of shares allotted by the company. It shows how much each share of the company has earned during the year.

Also important is to check out the trends, by comparing last year's figures with those of the

current year. Trends are important because they show the way the company is going. For instance, a company may still be earning profits, but the amount gets smaller and smaller each year. Nobody in his right mind would invest in such a company.

That wraps up the basics of the P&L account. Investors can use this information not only to find a company's earnings, but also how it has arrived at these earnings. Did sales increase? Were expenses kept in check? Was interest expenditure too high? The answers to these questions will be provided by reading the P&L account.

Article 2: **The business snapshot**_
(Balance sheet is a snapshot of what a co. owes and owns)

Now that you've mastered the mysteries of the Profit & Loss Account, let's move on to the Balance Sheet. This gives you a picture of the size of the company's assets and liabilities, and the sources and uses of the company's funds

Unlike the P&L account, which shows the profit or loss a firm has incurred over a period of time, the balance sheet is a snapshot of the firm at A POINT OF TIME. As on a particular date, the last date of the accounting period, the assets and liabilities of the firm are all added up and presented in the balance sheet. The capital and reserves are added to the liabilities side to balance the two sides. In other words, Capital + Liabilities = Assets.

To illustrate, let us take the Balance Sheet of Reliance Industries.

	As at 31st March 1999		As at 31st March,1998	
	Rs.	**Rs.**	Rs.	Rs.
SOURCES OF FUNDS :				
Shareholders' Funds				
Share Capital - Equity	**933.39**		931.90	
Share Capital - Preference	**252.95**		187.95	
Reserves and Surplus	**11,183.00**		10,862.75	
		12,369.34		11,982.60
Securitisation / Advance Against Future Recievables Loan Funds		**965.02**		300
Secured Loans	**5,477.64**		2,736.78	_

Unsecured Loans	**5,207.65**		5,510.55	
		10,685.29		8,247.33
TOTAL		**24,019.65**		20,529.93

APPLICATION OF FUNDS:

Fixed Assets				
Gross Block	**18,650.33**		17,848.33	
Less:Depreciation	**6,691.93**		4,944.47	
Net Block	**11,958.40**		12,903.86	
Capital Work-in-Progress	**3,437.83**		2,069.43	
		15,396.23		14,973.29
Investments		**4,294.59**		4,282.33
Current Assets, Loans and Advances				
Current Assets				
Interest Accrued on Investments	**25.61**		21.07	
Inventories	**1,408.61**		1,343.96	
Sundry Debtors	**457.10**		642.72	
Cash and Bank Balances	**4,897.60**		2,133.51	
	6,788.92		4,141.26	
Loans and Advances	**1,676.26**		991.05	
	8,465.18		5,132.31	
Less: **Current Liabilities and Provisions**				
Current Liabilities	**3,591.98**		3,382.01	
Provisions	**544.37**		475.99	
	4,136.35		3,858.00	
Net Current Assets		**4,328.83**		1,274.31
TOTAL		**24,091.65**		20,529.93

Significant Accounting Policies

Notes on Accounts

You'll notice it's divided into two broad sections- **Sources of Funds** and **Application of Funds.**

Sources of funds

What are the sources of funds? Obviously **share capital** is one of them. In the Reliance balance sheet, there are two types of share capital-- **equity** and **preference**. Equity shares are ordinary shares. Preference shares, on the other hand, are so called because they get preferential treatment when it comes to paying dividend. Preference shareholders are paid a fixed dividend, unlike ordinary shareholders, whose dividends vary according to how well the company has performed.

However, preference shareholders, because they opt for the security of fixed dividend payments also forgo capital appreciation -their shares are typically redeemed at a fixed price (often no different what they paid for it).

Profits retained by the business over the years are also a source of funds. These are included under the head **"Reserves and Surplus"**. **Loans**, secured and unsecured, constitute the other source of funds. **Secured loans** are those in which the lender has a charge on the company's assets as security, while **unsecured loans** are those where there is no security, for example fixed deposits from the public.

There's yet another source of funds. You'll find, towards the bottom of the balance sheet, an item called **Current Liabilities** and Provisions, which are deducted from Current Assets. Current Liabilities are things like **Sundry Creditors**, or those to whom the company owes money. In other words, you owe someone money, but you haven't paid him yet. So he becomes a source of funds.

The other item, **Provisions**, is a bit trickier. These are sums set aside but payments have not been made. In other words, you need to pay income tax, wealth tax, dividend, leave encashment etc, and make provisions for them, but because you haven't yet paid these sums, they become a source of funds.

Uses of funds

Now we come to the applications side of the balance sheet. Here we have the uses to which all those funds, which have been sourced, have been put. There are two broad classifications--fixed assets and current assets.

Fixed assets are things like plant and machinery. Total depreciation on these assets (see article on P&L account) is deducted from gross assets to arrive at **net assets** or **net block**. To that is added **capital work-in-progress**, that is, the projects going on at the balance sheet date.

Investments in stocks or bonds are another way in which funds can be used. And lastly we have **current assets**, so called because they form part of the working capital cycle which transforms raw materials to finished goods. Current assets consist of **inventory**, people who owe the company (**sundry debtors**) and **cash** and **bank balances**. **Loans and advances** given to others is also a use for funds.

How do you use this information?

Now you have all this information about where the company has got its money from and how it has used it. But what use is it? You'll notice there are two columns in the balance sheet, with the previous year's figure also being given. Comparing the two sets of figures leads to some insights.

For instance, in the Reliance balance sheet, the amount of secured loans has gone up from Rs2736cr to Rs5477cr. How did it use this money? The balance sheet shows that part of it went towards increasing gross block, part towards the higher capital work-in-progress a bit on inventories and a large part was held in cash and bank balances. You can make a similar analysis for every source and use of funds, checking out how funds were sourced and how it was spent during the year. For instance, if a company siphons out money by giving loans to associate companies, the balance sheet will tell that to you.

A snapshot as on a particular date

One important caveat. The balance sheet is a snapshot, as on a particular date. For instance, if you had checked the balance sheet a few days earlier, the cash and bank balances may not have been so high. Or a company may have repaid a loan just for a few days to show lower indebtedness as on a particular date. Doing up the balance sheet in this fashion is known as window dressing. So now that you can read a balance sheet, keep a pinch of salt handy.

Article 3: Why read an annual report?

(There are some interesting and important fine prints in the Annual Report. It pays to read them)

Now that you've acquired the MBS degree (Master of the Balance sheet), you need to turn your attention to post-MBS studies. A company's annual report has reams of matter apart from the actual balance sheet and Profit & Loss figures, much of which could aid you in forming an opinion about the company.

The Auditor's Report & the Notes to the Accounts

Let's start with the Auditor's Report and the "Notes to the Accounts." The Auditor's Report will tell you what the auditor thinks about how the accounts have been drawn up. If he thinks that some accounting treatment is a bit dicey, and would affect the profits, he makes what is called a qualification to the accounts. In plain words, what he's doing is drawing your attention to the fact that the profit would have been different if the accounts had not been massaged. Usually, the auditor also tells you what impact the faulty accounting policy has on the firm's profits.

The Notes to the Accounts contain some fine print that is well worth studying. For instance, the notes to Reliance Industries' accounts point out that inter-divisional sales of Rs3929cr are included in the company's sales figure. Inter-divisional transfers are sales between one division of the company to another. This amount, therefore, should not be included in the total sales figure. Or take another example. The Notes point out that RIL has changed its method of depreciation, with the result that the profit for the year has been understated. So if you didn't look at the Notes, you could be misled.

Also included is quantitative information such as installed capacity, its utilisation, volumes sold etc. This will enable you to find out whether an increase in sales, for example, is due merely to higher prices, or to increase in volume of goods sold. Since the quantities of products produced are given, you will be able to get information about the trends in volumes of the different products.

Spare a glance at the figures for imports and the foreign exchange earned. That'll enable you to gauge the impact, for instance, of a depreciation in the currency.

The Cash Flow Statement

The cash flow statement reconciles the opening balance of cash (and money in the bank) with the closing balance. It shows the effect on cash of the various transactions. Since profit is often dependent upon the accounting policies you adopt, the cash flow statement is a more transparent way of showing a company's operations than the P&L account. It provides additional data. For instance, while the change in the debt outstanding can be gleaned from the balance sheet, the cash flow statement will tell you how much of borrowings have been repaid and how

much fresh borrowing has been resorted to.

The cash generated from operations is an important indicator. If that figure is negative, it means that cash is being sourced from external sources to fund existing operations. That's certainly not sustainable in the long run.

Chairman's Communication and Director's Report
This is sometimes a mere PR exercise, but it could also be a source of insight into a company's strategy. An example would be Subhash Chandra's vision for Zee, which clearly charts out the way he wants the group to grow. The Directors' Report and, in some cases, the Management Discussion and Analysis, sets out the management's view of the operations of the company during the year. In a multi-divisional company, the performance of the various divisions are analysed in some detail. This would enable you to know which businesses are doing well and which not so well.

Reconciliation with US GAAP

Thee days, with an eye on the ADR market, many companies have started reconciling their accounts with the accounts according to the US generally accepted accounting principles (GAAP). For Reliance Industries, you will notice that the profit under US GAAP is much lower than the profit under Indian accounting norms. That's because of deferred tax. There is sometimes a difference between the year in which a transaction affects taxable income and the year in which it enters into pre-tax income. For instance, higher depreciation is permitted under tax laws as compared to the Companies Act. Over time, however, such differences are ironed out. The benefits of higher depreciation, for instance, are lost over a period of time. So unless accounting is made for deferred taxes, there could be sudden shock in the year when the tax shelter is withdrawn. Accounting for deferred tax smoothens out such fluctuations.

Now that you've progressed to the stage where you understand the concept behind deferred tax accounting, you can award yourself the title" Doctor of the Annual Report".

Article 4: ignore

(As always there is more than meets the eye.Here is a simple way to discern the income statement...)

by Ashok Kanetkar

Ashok Kanetkar is a retired executive with senior-level experience at several companies, most recently Cummins India. Apart from his experience of the corporate sector as well as the engineering industry - he is an articulate and dedicated student of Graham, Buffet and other investment gurus.

This article suggests a method of rewriting the income statement for gaining clarity regarding the performance of a company. Metaphorically speaking the format suggested will show whether the company is gaining in muscle or is just adding flab.

Some financial terms have found a permanent place in every day usage. 'Bottom line' is one such term. A little later the term 'Top line' also started gaining in currency. This is but natural because if there is a bottom line, general expectation is that there should be a top line too. These lines, top and bottom, appear in the income statement of the annual report.

In the income statement (also called a Profit and Loss account or simply the P & L account) the bottom line refers to the net profit made for the period under consideration and the top line refers to sales income.

Analysis of an income statement starts from the top line, the total sales. It is here that an analyst has to make changes and clarify some of his assumptions. This is necessary because the main objective should always remain in view, which is to gain greater clarity and also to seek easy means of comparison between two or more companies.

Generally, in the case of finding investment potential, the objective would be to find the 'true' income of the company. By 'true' we mean that income which has come out of the declared main activity of the company. Though we shall not totally overlook income from other sources, our main aim is to find out how the company is performing in its avowed activity. So, we shall initially overlook the 'other income' and then make adjustments for any other income, which is not of a recurring nature.

Reasons for ascertaining the true income are simple and also logical. Company's profits essentially should come from its main activity. What it earns out of its investment activity is the butter and jam on the bread and not a reward for its own toil and sweat. We are interested in finding out how the company is faring in the existing market on the basis of its product.

In other words how it is earning the bread without which the butter and jam are of little value. A downward trend in the income from main activity is a clear indication of trouble in the near future. If the trend continues, chances are that other income will also start sliding leading to further trouble.

One more assumption is that past performance is a fair indicator for projecting future earnings. Theoretically, from investment point of view, this may not sound right because while investing in shares we are interested in the future and no one can really predict what the future has in store. Experience, however, suggests that matured companies do not deviate too much from the past.

The relationship between income and different expenditure heads shows a relatively stable pattern and a major deviation therefore in any year can easily stand out. Circumstances in the past which led to record performance in either direction become apparent and if similar circumstances are expected to arise again in the future, projections become that much simpler and realistic.

With the above logic a format for rewriting the income statement is suggested. The example taken is of Great Eastern Shipping and the idea is developed in two steps. The first step leads to a broad analysis and finer points are seen in the second step.

In the first step the other income is taken out and all expenses are deducted from the operating income. The other income is then added back. This method readily shows how much dependent the company is on its other income.

In the second step the operating and other income is further investigated to take out non-recurring items that are in the form of one time windfall or such items that are not likely to appear in future statements.

Step 1. Rewritten Income statement of GE Shipping. Figures in Rs. Million.

	Mar 2000	Mar 99	Mar 98
Income from Operations	9625.9	9295.0	9150.5
Less Expenditure	6260.3	5988.9	5435.2
Operating Profit	3365.6	3306.1	3715.3
Less Interest	608.1	578.2	650.4
PBDT	2757.5	2727.9	3064.9
Less Depreciation	1811.7	1647.0	1558.1
Less Provisions	0.0	50.0	85.0
Operating PBT	945.8	1030.9	1421.8
Add Other Income	318.7	513.5	490.4
PBT as on P & L Acc.	1264.5	1544.4	1912.2
Less provision for tax	160.0	280.0	270.0
PAT for the year	1104.5	1264.4	1642.2

Note: We advise that in case manufacturing units where sales are inclusive of excise duty, it is a good practice to deduct excise duty from operating income as well as from expenditure to get a proper feel.

In the case of GE Shipping, by separating the other income from the total income, we find that the company has marginally improved its efficiency. This is not the picture that emerges from a look at the PBT and PAT, which show a continuing slide despite a continuing rise in operating income. Thus, though the slide continues as far as bottom line is concerned, the company has managed to arrest it at the operating level. This, for an analyst, is a very important finding because it tells him that things are not as bad as they look.

The above figures also show, with greater ease, that the real culprits are interest, depreciation and lower other income. A view may be taken that higher depreciation is on account of higher investment in plant and equipment that was financed by liquidating some of the investments and additional borrowings, which in turn have given rise to higher interest. It may gladden the heart of the analyst to know that the company is investing in new equipment and is willing to pay the higher depreciation though it may somewhat mar the bottom line. When the market conditions improve the company may be in a position to take full advantage of the added equipment. This view, however, will have to be confirmed by going into further details.

A 3.5% increase in operating income has resulted in an increase of 1.8% in operating profit, which is much better than the previous year where an increase in operating income of 1.5% had actually resulted in a decline of 11% in the operating profits. An important trend reversal has taken place here.

The next step calls for a slightly detailed study of the income schedules to find out the non-recurring type of income or income from past events. Examples of such items are settlement of old claims, refund of excess income tax, income through renegotiations, recovery of some bad debts which were earlier written off and any other such items. It is true that generally such items are small in amount compared to the main income yet an analyst has to make sure that any distortions due to oversight are straightened out.

Occasionally we also find some windfall items. A company may decide to sell its holding in other affiliated company during a particular year. The profit from sale of such an investment is definitely a non-recurring type if it exceeds average of earlier years. One example that comes readily to mind is of Kirloskar Oil Engines Limited when it sold a part of its holding in Kirloskar Cummins Limited.

For income from earlier years it is a good practice to deduct it from the year in which it is reported and add it to the year to which it pertains. For windfall income it is better if it is deducted from the single year but maintained in the long-term analysis.

Coming back to Great Eastern Shipping we find two items of the type mentioned above in the annual report for year 1999-2000. The schedule for other income shows Rs. 7 Million as 'Doubtful advances written off in earlier year now recovered' and Rs. 42.5 Million as 'Provision

for diminution in value of long term investment written back'. As per our discussions, therefore, Rs.49.5 Million should be deducted from the income of 99-2000 and added to the income of 98-99. The corrected values should therefore appear as given below

	Mar 2000	Mar 99	Mar 98
Operating PBT	945.8	1030.9	1421.8
Add O/Income (Adjusted)	269.2	563.0	490.4
Total PBT	1215.0	1593.9	1912.2

Please note that in this case the changes are in the other income only and therefore the operating PBT is left unchanged.

A securities analyst has to find out the company's ability to generate sales and retain maximum amount out of it. What it earns out of its own muscle power is what is of main interest and the rest is to be treated as secondary. The above format allows the analyst to study this ability. If one considers Sales as the driving pump for the financial system then it is worth our while to know how much is pure water and how much is air out of all that is pumped. Both are useful but one is more important than the other is.

Article 5: **ignore**

(Is depreciation a cash inflow? Is depreciation a necessary expense? The answers to these questi...)

by Ashok Kanetkar

Ashok Kanetkar is a retired executive with senior-level experience at several companies, most recently Cummins India. Apart from his experience of the corporate sector as well as the engineering industry - he is an articulate and dedicated student of Graham, Buffet and other investment gurus.

> At 95% of American businesses, capital expenditures that over time roughly approximate depreciation are a necessity and are every bit as real an expense as labor or utility costs. Even a high school dropout knows that to finance a car he must have income that covers not only interest and operating expenses, but also realistically-calculated depreciation. He would be laughed out of the bank if he started talking about EBDIT
> -- **Warren Buffet** (1989 letter to shareholders)

Depreciation is an expense but it is not a cash expense. It reduces the profit for the year but not the cash inflow. This apparent anomaly gives depreciation a mysterious aura in the balance sheet and profit and loss account. The mystery however gets resolved if it is understood that depreciation is a gradual allocation of expense incurred in acquiring fixed assets spread over a number of years.

The term fixed assets is used to describe long-lived assets acquired for use in the operation of the business and not intended for resale to customers. Major categories of fixed assets are tangible and intangible. Examples of tangible assets are land, building, machinery, furniture, vehicles etc. Goodwill, brand value, trademarks, patents etc are the intangible assets. The term intangible is used to describe an asset lacking in physical substance. Depreciation is mainly applicable to tangible fixed assets.

Reader should note that companies generally have a policy about depreciable fixed asset. Thus a pencil sharpener worth five rupees, though technically a fixed asset, is not treated as such and is treated as revenue expenditure for its full value but a building worth a few million rupees is treated as a fixed asset to be depreciated over the years. Treatment of pencil sharpener as revenue expenditure is mainly for accounting convenience.

Fixed assets, with the exception of land, are of use to a company for only a limited number of years, and the cost of each fixed asset is allocated as an expense during the years it is used. The term 'Depreciation' is used to describe this gradual conversion of the cost of a plant asset into expense. A convenient way of understanding this is to think of fixed assets as a bundle of services to be received by the owner over a number of years and payment is to be made for the service received during the year at the end of the year.

The committee on Accounting Procedures of the American Institute of Certified Public Accountants has very lucidly described the concept of depreciation as follows:

> The cost of productive facility is one of the costs of the services it renders during its useful economic life. Generally accepted accounting principles require that this cost be spread over the expected useful life of the facility in such a way as to allocate it as equitably as possible to the periods during which services are obtained from the use of the facility. This procedure is known as depreciation accounting, a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit in a systematic and rational manner. It is a process of allocation, not of valuation.

Depreciation is not a process of valuation. The term residual value or written down value is slightly misleading. It is really the residual amount of the original cost, which is yet to be allocated. In actual reality also the residual cost rarely, or almost never, is equal to the value of the asset in the market. This aspect can be understood by considering the example of the building.

The accountant will continue to allocate the cost every year and at some point the residual cost will either become zero or very near to zero, depending upon the method of calculating depreciation, but if the company decided to sell the building the amount it would receive will be as per the market demand for that building.

We should now see the two basic causes of depreciation and then proceed to the methods of calculating it. The two causes are physical deterioration and obsolescence. Physical deterioration occurs from use and exposure to atmosphere. This is simple to understand. A car used for a year is definitely not the same as it was when bought.

Similarly a machine after some use is not the same as it was when new. Some wear and tear is inevitable. A time will thus come when after some years the car or the machine ceases to give any useful output. This wear and tear is the expense or the depreciation and this number of years is known as the useful life of the asset.

Obsolescence means the process of becoming out of date or obsolete. Computers are a good example of equipment going out of date very fast. Technology in this area is making such rapid progress that what was efficient a couple of years ago is no longer so. Machines with Windows 95 became outdated when Windows 98 operating system arrived. Size of the RAM becomes outdated almost every year. The useful life of these machines, thus, is much shorter compared to other types of machines or buildings and therefore the amount of depreciation is also greater.

In India two main methods of calculating the depreciation are prevalent. One is called 'Straight Line Method (SLM)' and the other is called 'Written Down value (WDV)' method.

In SLM the initial cost is distributed equally over the useful life. Thus every year an equal amount is allocated as an expense till the cost of the asset is fully recovered. Take the example of a car. If a car is purchased for Rs. 100,000 and the useful life of the car is decided to be five years, then every year Rs. 20,000 are allocated as an expense in the profit and Loss account on account of depreciation of the car. At the end of the fifth year the cost of the car will have been fully recovered. The rate of depreciation in this case is 20% per year. In mathematical terms this will appear as,

SLM Residual cost = IC{1- DY/100}, where:
IC = Initial cost
D = Rate of depreciation in percentage
Y = Number of years.

In the WDV method the rate of depreciation is the key and depreciation is calculated at that rate which is then applied to the residual cost every year. In our example of the car, for the same rate of depreciation i.e. 20%, the residual cost after the first year will be Rs. 80,000 and after the second year it will be Rs.64000 and so on. This principle ensures that the value of the car will never become zero. This is understandable because even the car fit for the scrap yard will have some value. In mathematical terms this can be expressed as,

WDV Residual cost = **IC (1-D/100)^Y ;**

(Symbols are same as those for SLM equation)

Though mathematically a possibility exists of residual cost becoming zero if rate of depreciation is 100%, this is against the basic concept and hence overlooked. The important point to remember is that in SLM the residual cost can become zero while it can never become zero in WDV.

Please note that the rate of depreciation mentioned above is imaginary. Companies have to observe rules about rate of depreciation as well as the method of calculating depreciation. In the schedule explaining accounting policies in an annual report companies disclose the method used for different assets.

Since every year some expense is allocated as depreciation, it is natural that it should be deducted from the Sales revenue along with other expenses like manufacturing expenses and interest etc. Therefore we see it appearing in the profit and loss account and why it reduces the profit. The amount of depreciation accumulated over the years appears in the balance sheet.

In the balance sheet we see first the gross block, which is the actual amount, paid for the

acquisition of all the fixed assets on the company books over the years. Under this figure appears the accumulated depreciation for all the assets. After this appears the net block which is the difference between the gross block and the accumulated depreciation. In other words, net block is the residual cost of the fixed assets, which is yet to be allocated as expense. How each asset has been depreciated can be seen in the schedule on fixed assets.

Yet, because depreciation is not a cash expense (it is an allocation, remember?), it does not affect the cash flow. Therefore in the cash flow statement we find that the amount of depreciation is added back to the profit. This treatment of depreciation leads to a wrong feeling where depreciation is thought of as a 'source' in working out the cash flow. It is not so. By adding depreciation profit is merely restored to its pre write-off level to represent correct cash inflow. Depreciation as such does not create any funds since it is just an accounting entry.

Analysts studying the performance of a company are interested more in finding out if sensible depreciation has been charged, than in finding out whether correct or adequate depreciation has been charged. Sensible charging of depreciation indicates that the company has properly judged the useful life of the asset and therefore the profit reported is more 'true' to that extent. The prevailing laws of course limit this because no one can fight against the laws. Analysts are also interested in spotting any change in the method of calculating depreciation because that can directly affect the reported profit. Some amount of window dressing can be done within the framework of law but it is important to know the effect of such a dressing.

We shall conclude this discussion on depreciation by commenting on a common mistake made by many students of financial statements. It is believed by many that accumulated depreciation represents funds accumulated for the purpose of buying new equipment when the existing facilities wear out. Here we would like to quote Meigs and Johnson authors of 'Accounting, the basis for business decisions'. They say,

> Perhaps the best way to combat such mistaken notions (of depreciation being reserves accumulated to replace worn out equipment) is to emphasize that the credit balance in an accumulated depreciation account represents the expired cost of assets acquired in the past. ?An accumulated depreciation account has a 'credit' balance; it does not represent an asset and it can not be used in any way to pay for new equipment. To buy a new plant asset requires cash; the total amount of cash owned by a company is shown by the asset account of cash (and investment).

We hope the mystery about depreciation has been resolved.

Article 6: On depreciation

(Is depreciation a cash inflow? Is it a necessary expense? Follow this link for answers.)

by Ashok Kanetkar

Ashok Kanetkar is a retired executive with senior-level experience at several companies, most recently Cummins India. Apart from his experience of the corporate sector as well as the engineering industry - he is an articulate and dedicated student of Graham, Buffet and other investment gurus.

> At 95% of American businesses, capital expenditures that over time roughly approximate depreciation are a necessity and are every bit as real an expense as labor or utility costs. Even a high school dropout knows that to finance a car he must have income that covers not only interest and operating expenses, but also realistically-calculated depreciation. He would be laughed out of the bank if he started talking about EBDIT
> -- **Warren Buffet** (1989 letter to shareholders)

Depreciation is an expense but it is not a cash expense. It reduces the profit for the year but not the cash inflow. This apparent anomaly gives depreciation a mysterious aura in the balance sheet and profit and loss account. The mystery however gets resolved if it is understood that depreciation is a gradual allocation of expense incurred in acquiring fixed assets spread over a number of years.

The term fixed assets is used to describe long-lived assets acquired for use in the operation of the business and not intended for resale to customers. Major categories of fixed assets are tangible and intangible. Examples of tangible assets are land, building, machinery, furniture, vehicles etc. Goodwill, brand value, trademarks, patents etc are the intangible assets. The term intangible is used to describe an asset lacking in physical substance. Depreciation is mainly applicable to tangible fixed assets.

Reader should note that companies generally have a policy about depreciable fixed asset. Thus a pencil sharpener worth five rupees, though technically a fixed asset, is not treated as such and is treated as revenue expenditure for its full value but a building worth a few million rupees is treated as a fixed asset to be depreciated over the years. Treatment of pencil sharpener as revenue expenditure is mainly for accounting convenience.

Fixed assets, with the exception of land, are of use to a company for only a limited number of years, and the cost of each fixed asset is allocated as an expense during the years it is used. The term 'Depreciation' is used to describe this gradual conversion of the cost of a plant asset into expense. A convenient way of understanding this is to think of fixed assets as a bundle of services to be received by the owner over a number of years and payment is to be made for the service received during the year at the end of the year.

The committee on Accounting Procedures of the American Institute of Certified Public Accountants has very lucidly described the concept of depreciation as follows:

> The cost of productive facility is one of the costs of the services it renders during its useful economic life. Generally accepted accounting principles require that this cost be spread over the expected useful life of the facility in such a way as to allocate it as equitably as possible to the periods during which services are obtained from the use of the facility. This procedure is known as depreciation accounting, a system of accounting which aims to distribute the cost or other basic value of tangible capital assets, less salvage (if any), over the estimated useful life of the unit in a systematic and rational manner. It is a process of allocation, not of valuation.

Depreciation is not a process of valuation. The term residual value or written down value is slightly misleading. It is really the residual amount of the original cost, which is yet to be allocated. In actual reality also the residual cost rarely, or almost never, is equal to the value of the asset in the market. This aspect can be understood by considering the example of the building.

The accountant will continue to allocate the cost every year and at some point the residual cost will either become zero or very near to zero, depending upon the method of calculating depreciation, but if the company decided to sell the building the amount it would receive will be as per the market demand for that building.

We should now see the two basic causes of depreciation and then proceed to the methods of calculating it. The two causes are physical deterioration and obsolescence. Physical deterioration occurs from use and exposure to atmosphere. This is simple to understand. A car used for a year is definitely not the same as it was when bought.

Similarly a machine after some use is not the same as it was when new. Some wear and tear is inevitable. A time will thus come when after some years the car or the machine ceases to give any useful output. This wear and tear is the expense or the depreciation and this number of years is known as the useful life of the asset.

Obsolescence means the process of becoming out of date or obsolete. Computers are a good example of equipment going out of date very fast. Technology in this area is making such rapid progress that what was efficient a couple of years ago is no longer so. Machines with Windows 95 became outdated when

Windows 98 operating system arrived. Size of the RAM becomes outdated almost every year. The useful life of these machines, thus, is much shorter compared to other types of machines or buildings and therefore the amount of depreciation is also greater.

In India two main methods of calculating the depreciation are prevalent. One is called 'Straight Line Method (SLM)' and the other is called 'Written Down value (WDV)' method.

In SLM the initial cost is distributed equally over the useful life. Thus every year an equal amount is allocated as an expense till the cost of the asset is fully recovered. Take the example of a car. If a car is purchased for Rs. 100,000 and the useful life of the car is decided to be five years, then every year Rs. 20,000 are allocated as an expense in the profit and Loss account on account of depreciation of the car. At the end of the fifth year the cost of the car will have been fully recovered. The rate of depreciation in this case is 20% per year. In mathematical terms this will appear as,

SLM Residual cost = IC{1- DY/100}, where:
IC = Initial cost
D = Rate of depreciation in percentage
Y = Number of years.

In the WDV method the rate of depreciation is the key and depreciation is calculated at that rate which is then applied to the residual cost every year. In our example of the car, for the same rate of depreciation i.e. 20%, the residual cost after the first year will be Rs. 80,000 and after the second year it will be Rs.64000 and so on. This principle ensures that the value of the car will never become zero. This is understandable because even the car fit for the scrap yard will have some value. In mathematical terms this can be expressed as,

WDV Residual cost = **IC (1-D/100)^Y ;**

(Symbols are same as those for SLM equation)

Though mathematically a possibility exists of residual cost becoming zero if rate of depreciation is 100%, this is against the basic concept and hence overlooked. The important point to remember is that in SLM the residual cost can become zero while it can never become zero in WDV.

Please note that the rate of depreciation mentioned above is imaginary. Companies have to observe rules about rate of depreciation as well as the method of calculating depreciation. In the schedule explaining accounting policies in an annual report companies disclose the method used for different assets.

Since every year some expense is allocated as depreciation, it is natural that it should be deducted from the Sales revenue along with other expenses like manufacturing expenses and interest etc. Therefore we see it appearing in the profit and loss account and why it reduces the profit. The amount of depreciation accumulated over the years appears in the balance sheet.

In the balance sheet we see first the gross block, which is the actual amount, paid for the acquisition of all the fixed assets on the company books over the years. Under this figure appears the accumulated depreciation for all the assets. After this appears the net block which is the difference between the gross block and the accumulated depreciation. In other words, net block is the residual cost of the fixed assets, which is yet to be allocated as expense. How each asset has been depreciated can be seen in the schedule on fixed assets.

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Article 7: P&L in depth

(Here's an easy way to discern the income statement to know what is the true income of a business)

by Ashok Kanetkar

Ashok Kanetkar is a retired executive with senior-level experience at several companies, most recently Cummins India. Apart from his experience of the corporate sector as well as the engineering industry - he is an articulate and dedicated student of Graham, Buffet and other investment gurus.

This article suggests a method of rewriting the income statement for gaining clarity regarding the performance of a company. Metaphorically speaking the format suggested will show whether the company is gaining in muscle or is just adding flab.

Some financial terms have found a permanent place in every day usage. 'Bottom line' is one such term. A little later the term 'Top line' also started gaining in currency. This is but natural because if there is a bottom line, general expectation is that there should be a top line too. These lines, top and bottom, appear in the income statement of the annual report.

In the income statement (also called a Profit and Loss account or simply the P & L account) the bottom line refers to the net profit made for the period under consideration and the top line refers to sales income.

Analysis of an income statement starts from the top line, the total sales. It is here that an analyst has to make changes and clarify some of his assumptions. This is necessary because the main objective should always remain in view, which is to gain greater clarity and also to seek easy means of comparison between two or more companies.

Generally, in the case of finding investment potential, the objective would be to find the 'true' income of the company. By 'true' we mean that income which has come out of the declared main activity of the company. Though we shall not totally overlook income from other sources, our main aim is to find out how the company is performing in its avowed activity. So, we shall initially overlook the 'other income' and then make adjustments for any other income, which is not of a recurring nature.

Reasons for ascertaining the true income are simple and also logical. Company's profits essentially should come from its main activity. What it earns out of its investment activity is the butter and jam on the bread and not a reward for its own toil and sweat. We are interested in finding out how the company is faring in the existing market on the basis of its product.

In other words how it is earning the bread without which the butter and jam are of little value. A downward trend in the income from main activity is a clear indication of trouble in the near future. If the trend continues, chances are that other income will also start sliding leading to further trouble.

One more assumption is that past performance is a fair indicator for projecting future earnings. Theoretically, from investment point of view, this may not sound right because while investing in shares we are interested in the future and no one can really predict what the future has in store. Experience, however, suggests that matured companies do not deviate too much from the past.

The relationship between income and different expenditure heads shows a relatively stable pattern and a major deviation therefore in any year can easily stand out. Circumstances in the past which led to record performance in either direction become apparent and if similar circumstances are expected to arise again in the future, projections become that much simpler and realistic.

With the above logic a format for rewriting the income statement is suggested. The example taken is of Great Eastern Shipping and the idea is developed in two steps. The first step leads to a broad analysis and finer points are seen in the second step.

In the first step the other income is taken out and all expenses are deducted from the operating income. The other income is then added back. This method readily shows how much dependent the company is on its other income.

In the second step the operating and other income is further investigated to take out non-recurring items that are in the form of one time windfall or such items that are not likely to appear in future statements.

Step 1. Rewritten Income statement of GE Shipping. Figures in Rs. Million.

	Mar 2000	Mar 99	Mar 98
Income from Operations	9625.9	9295.0	9150.5
Less Expenditure	6260.3	5988.9	5435.2
Operating Profit	3365.6	3306.1	3715.3
Less Interest	608.1	578.2	650.4
PBDT	2757.5	2727.9	3064.9
Less Depreciation	1811.7	1647.0	1558.1
Less Provisions	0.0	50.0	85.0
Operating PBT	945.8	1030.9	1421.8
Add Other Income	318.7	513.5	490.4
PBT as on P & L Acc.	1264.5	1544.4	1912.2
Less provision for tax	160.0	280.0	270.0
PAT for the year	1104.5	1264.4	1642.2

Note: We advise that in case manufacturing units where sales are inclusive of excise duty, it is a good practice to deduct excise duty from operating income as well as from expenditure to get a proper feel.

In the case of GE Shipping, by separating the other income from the total income, we find that the company has marginally improved its efficiency. This is not the picture that emerges from a look at the PBT and PAT, which show a continuing slide despite a continuing rise in operating income. Thus, though the slide continues as far as bottom line is concerned, the company has managed to arrest it at the operating level. This, for an analyst, is a very important finding because it tells him that things are not as bad as they look.

The above figures also show, with greater ease, that the real culprits are interest, depreciation and lower other income. A view may be taken that higher depreciation is on account of higher investment in plant and equipment that was financed by liquidating some of the investments and additional borrowings, which in turn have given rise to higher interest. It may gladden the heart of the analyst to know that the company is investing in new equipment and is willing to pay the higher depreciation though it may somewhat mar the bottom line. When the market conditions improve the company may be in a position to take full advantage of the added equipment. This view, however, will have to be confirmed by going into further details.

A 3.5% increase in operating income has resulted in an increase of 1.8% in operating profit, which is much better than the previous year where an increase in operating income of 1.5% had actually resulted in a decline of 11% in the operating profits. An important trend reversal has taken place here.

The next step calls for a slightly detailed study of the income schedules to find out the non-recurring type of income or income from past events. Examples of such items are settlement of old claims, refund of excess income tax, income through renegotiations, recovery of some bad debts which were earlier written off and any other such items. It is true that generally such items are small in amount compared to the main income yet an analyst has to make sure that any distortions due to oversight are straightened out.

Occasionally we also find some windfall items. A company may decide to sell its holding in other affiliated company during a particular year. The profit from sale of such an investment is definitely a non-recurring type if it exceeds average of earlier years. One example that comes readily to mind is of Kirloskar Oil Engines Limited when it sold a part of its holding in Kirloskar Cummins Limited.

For income from earlier years it is a good practice to deduct it from the year in which it is reported and add it to the year to which it pertains. For windfall income it is better if it is deducted from the single year but maintained in the long-term analysis.

Coming back to Great Eastern Shipping we find two items of the type mentioned above in the annual report for year 1999-2000. The schedule for other income shows Rs. 7 Million as 'Doubtful advances written off in earlier year now recovered' and Rs. 42.5 Million as 'Provision

for diminution in value of long term investment written back'. As per our discussions, therefore, Rs.49.5 Million should be deducted from the income of 99-2000 and added to the income of 98-99. The corrected values should therefore appear as given below

	Mar 2000	Mar 99	Mar 98
Operating PBT	945.8	1030.9	1421.8
Add O/Income (Adjusted)	269.2	563.0	490.4
Total PBT	1215.0	1593.9	1912.2

Please note that in this case the changes are in the other income only and therefore the operating PBT is left unchanged.

A securities analyst has to find out the company's ability to generate sales and retain maximum amount out of it. What it earns out of its own muscle power is what is of main interest and the rest is to be treated as secondary. The above format allows the analyst to study this ability. If one considers Sales as the driving pump for the financial system then it is worth our while to know how much is pure water and how much is air out of all that is pumped. Both are useful but one is more important than the other is.

Chapter 5: Capital Structure

(Debt and equity: how does a company decide how much is right and how much is too much?)

Article 1: The right debt-equity mix

It's always difficult to choose between debt and equity when it comes to capital.

As we saw in the previous part, capital structuring of a company is an art. Finding the right mix of debt and equity to maximise returns to shareholders is as difficult as walking on a tight rope. There is no fixed formula that can be used across companies. A company has to find the right mix for itself. And this will depend on specific factors like capital requirement, the progress of a project, cash flows expected, its repaying capacity and so on.

What is solvency?

After a company has figured out its debt and equity mix, we, as investors, need to evaluate the decision. Why? Because capital structure has a strong bearing on the very solvency of the company. Now, what's that? Simply stated, solvency means whether a company can smoothly service all its debt-related obligations.

There are some tools that help us evaluate the state of solvency of a company. These are simple methods to know whether the current operations of a company are capable of meeting all its requirements for debt servicing.

For example, let us look at some broad financials of a company - Bellary Steels and Alloys.

Bellary Steels and Alloys : The Financials

(Rs Cr)	1999	1998	1997	1996
Debt	706	520	206	109
Net Worth	182	123	146	66
D/E (x)	**3.9**	**4.2**	**1.4**	**1.6**
PBDIT	29	59	77	43
Depreciation	7	10	31	5
PBIT	22	49	46	38
Interest	28	30	18	16
Interest cover (x)	**0.8**	**1.6**	**2.5**	**2.4**
Net Operating Cash Flow	-50	32	4	3
Investment Cash Flow	-142	-376	-23	-8
Financing Cash Flow	194	338	21	4
Increase in Equity	5	27	5	3
Increase in Debt	189	311	16	1

Understanding interest cover

A ratio called interest cover tells us how many times the company's profits cover its interest payments. After all, the profit before interest (PBIT) must at least adequately cover the interest obligations. To get this ratio, just divide PBIT by the interest. The number that you get shows how many times PBIT can meet the company's interest burden.

In our example, we see that from 1997 onwards, the company has been unable to maintain a balanced debt-equity ratio. Due to higher addition of debt in its capital structure, its financials were getting hit very hard. (The pinch is more severe during hard times when the operating profits fall).

Its interest costs have shot up in the subsequent years, thus proving a drain on its cash flows. So much so that in 1999, its profit before interest and taxes do not adequately cover even the interest payments. In 1999, one does not even need to calculate the net profit (or to be precise the net loss!)!

Beware of debt trap!

And look at the cash flows! A lion's share of its capital requirements is getting funded with debt. In 1999, even the operations are funded by debt. Obviously, the company needs more and still more debt to even service its interest costs (it has little option!).

This lands companies like the one mentioned above in a catch-22 situation. A time comes in their life when they need to borrow more even to pay interest on earlier debt. This vicious cycle continues, and the situation is called a **debt trap**.

Debt service cover

But interest is just one part of the story. A company has to pay installments towards the repayment of debt. A small modification in the previous formula is all that is required to see if it can service all these repayments. However, to calculate this ratio, one needs to know the repayment schedule of the company. Just add the installment due for a given period to the interest. Divide PBIT by this number. And in a jiffy, you know how adequately PBIT meets the total obligations.

In our example, the company has not yet started paying off its huge debt (its cash flows are so fragile!). So, let us make some assumptions to understand the debt service cover ratio.

Let us assume that the loan amount needs to be repaid over a 5-year period in equal installments and the company will not take more debt. Its average interest cost on the loan amount in the past four years is 8%. We assume this to be the interest rate.

	1999	2000	2001	2002	2003	2004
Debt	706	565	424	282	141	0
Repayment		141	141	141	141	141
Interest	28	45	34	23	11	0
Total towards debt service		**186**	**175**	**164**	**152**	**141**
Debt service cover		**0.1**				

The total amount that the company needs to set aside for servicing debt is the sum of interest

and repayment. The debt service cover is 0.1, which shows the hopeless inadequacy of the company in meeting its debt-related obligations in the next five years.

There is another interesting way of looking at debt cover.
Debt service cover is a simple ratio - PBIT/(installment + interest). What if we reverse this formula? It will then look like (Installment + interest)/ PBIT. This reciprocal has something interesting to tell us. If the profits of the company remain constant, this is the number of years the company needs to repay all its financial obligations.

So, we had said that Bellary Steel looks saddled with debt. The five-year schedule that we assumed is over-optimistic, to say the least. When will it be able to repay its debt? If all goes well, and if its profit remains at the current levels (without deteriorating further), the company should take 10 years (=1/0.1) to repay its debt.

Thus, a debt service ratio of 0.1 implies two things:
* First, it means that the company's PBIT can cover just 10% of its financial obligations.

* Second, it means that provided its PBIT remains constant, it will take 10 years for the company to repay all its debts (= 1/0.1)!

Solvency concerns everybody - investors in debt (lenders) as well as those in equity (shareholders). Growth, capacity expansion, acquisitions et al are the ends that a company needs capital for. However, a company should not stretch beyond its means. And, equally important are concerns about how a company sources its capital (means to the ends). Hence, the solvency calculation tools come in handy and tell us about the prudence a company has exercised in determining its capital structure.

Article 2: The burning question

(How much should companies borrow? Well, money is not free. Stretch is not the buzzword.)

As we saw in the previous part, capital structuring of a company is an art. Finding the right mix of debt and equity to maximise returns to shareholders is as difficult as walking on a tight rope. There is no fixed formula that can be used across companies. A company has to find the right mix for itself. And this will depend on specific factors like capital requirement, the progress of a project, cash flows expected, its repaying capacity and so on.

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Debt service cover is a simple ratio - PBIT/(installment + interest). What if we reverse this formula? It will then look like (Installment + interest)/ PBIT. This reciprocal has something interesting to tell us. If the profits of the company remain constant, this is the number of years the company needs to repay all its financial obligations.

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Article 3: *Thoda* debt, *thoda* equity_

(Some forms of capital are hybrid between debt and equity)

In the last two parts, we have learnt about the two broad forms of capital - equity and debt. We now know that these represent two ends of the capital spectrum available to a company to fund its business. And a good company balances its equity and debt capital to maximise return on equity (RoE). We have also seen that a higher debt funding could lead a company to a debt trap.

We have also learnt that investors in equity capital of a business bear higher risks and, hence, need to be compensated with higher returns. Another issue that is equally important with respect to equity holders is that they are the only ones with a right to vote and determine the direction of their company. Remember, owning equity is like owning a business! Investors in debt, on the other hand, are not only assured of a stable return on their capital but they also get their principal back. Hence, they take relatively lower risks and settle for relatively lower returns compared to equity holders.

But that leaves one question unanswered. Can there be a form of capital that would retain a mix of the characteristics of both equity and debt? And, if yes, why would investors or companies be interested in such a hybrid capital?

A company would be interested in such a capital structure only if it can reduce its cost of capital, or can help it keep its debt-equity mix within manageable limits or improve overall cash flows. Investors, on the other hand, would be interested in such a capital structure if it can provide them better risk-adjusted returns or can help them maximise their post-tax returns. The objectives make sense - but how do these structures fare in practice? Let us look at the most popular form of hybrid capital - the preference share capital - to understand how these blended capital structures work.

Preference capital defined

Preference capital is a share capital that has a fixed rate of return. It is called preference capital because holders of preference shares get preference over ordinary shareholders at the time of receiving dividends. In other words, a company will pay dividend to a preference share capital holder before offering the same to an investor in its equity capital. Obviously, the preference share capital holder does not have voting rights.

How does the corporate benefit?

Consider the various cases listed below for Capital Company. The company has a capital of Rs100cr, split between Rs30cr of equity and Rs70cr of debt. It is earning a RoE of 32.8% with this capital structure.

Let us suppose the company raises Rs20cr of preference capital at a dividend rate of 12%. (We will shortly let you know how even a dividend of 12% makes sense to an investor.) Continuing with our example, the first benefit to the company comes in the form of a drop in its debt costs as the debt to equity ratio improves. As we see in Case B, the RoE improves from 32.8% to 34.7%. Mind you, the risk of the business also comes down as the leverage drops. In other words, Case B clearly demonstrates how substituting debt with preference capital helps a company improve RoE to shareholders.

Capital Company		
	Case A	*Case B*
Liabilities		
Equity	30	30
Pref. Capital		20
Debt	70	50
Total	100	100
P&L		
Sales	100.00	100.00
Op. Profits	35.00	35.00

Deprn.	5.00	5.00
PBIT	30.00	30.00
Interest	14.00	9.50
Interest Rate	20.00%	19.00%
PBT	16.00	20.50
Tax	6.16	7.89
Tax Rate	38.50%	38.50%
PAT	9.84	12.61
Pref Dividend	0.00	2.20
Dividend Rate		12.00%
Retained Earnings	9.84	10.41
RoE	32.80%	34.69%

Lesstax Company		
	Case C	Case D
Liabilities		
Equity	30	30
Pref. Capital	0	20
Debt	70	50
Total	100	100
P&L		
Sales	100.00	100.00
Op. Profits	35.00	35.00
Deprn.	5.00	5.00
PBIT	30.00	30.00
Interest	14.00	9.50
Interest Rate	20.00%	19.00%
PBT	16.00	20.50
Tax	3.20	4.10
Tax Rate	20.00%	20.00%
PAT	12.80	16.40
Pref Dividend	0.00	2.20
Dividend Rate		12.00%
Retained Earnings	12.8	14.20
RoE	42.67%	47.33%

Now suppose, Lesstax Company substitutes Rs20cr of debt with preference capital just like Capital Company. The improvement in RoE in such a case is startling. Hence, it makes even more sense for companies with a lower tax rate to opt for preference share capital.

Thus, a company raising funds through the preference capital route pays a lesser cost on capital, and hence earns a higher RoE without stretching its borrowing limits. This option makes even more sense for companies with a lower tax rate.

How does the investor benefit?

Income from corporate dividends is tax-free. Hence, an investor in debt, though he may earn a 19% return, ends up paying taxes on the interest income, which reduces his effective return to 11.7%. However, with a 12% dividend on preference capital, the investor realises higher returns on his investment without undertaking higher risks.

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Thus, preference capital offers not only higher RoE to the equity shareholders but also achieves higher returns for the investors in preference capital.

Now we know why hybrid capital structures with a blend of equity and debt characteristics are so very popular.

Chapter 6: All about financial ratios

(Analysing the report card: where to look? What to do?)

Article 1: The story behind numbers

(Numbers can tell us about profitability, solvency and liquidity, if we care to listen...)

Talking about numbers reminds us of the mathematics classes in school days, when we would invariably get lost in a maze of numbers?mensurations, formulae, graphs et al. Numbers still remain a put-off. And yet, we seem to share a love-hate relationship with them; otherwise, why do we use them so much and so often?

Through the following story, we will try and demystify some of the most important numbers used in the world of business. The story would come in several episodes. You would find an interesting tale behind each number, only if you care to listen. Our objective is to help you evaluate businesses for investment purposes by making numbers easy to comprehend. After all, ?Owning equity is akin to owning a company?. And it is imperative that you understand the numbers of the company that you invest in, no?

A business can actually be assessed on the basis of several parameters?profitability (whether it is making money), efficiency (if it?s making the best possible use of its resources), leverage (whether it has the right mix of debt and equity), solvency (whether it can pay off its debts), liquidity (whether it has cash to meet its day-to-day needs) and so on. All these point to the overall health of a company?and hence, to the health of its shareholders.

In order to interpret the company on these parameters, we need to know what goes behind the numbers in the balance sheet and the profit & loss statement.

Let us talk about a company that seeks to manufacture soaps. To begin with, it will need a plant in place. Without the plant there would be no operations, right? To know what the company has, the best place to look for is its balance sheet.

Balance sheet

A Balance sheet is like a snapshot that captures a mood at a particular instant. It is a financial snapshot of a company at a given point of time.

Gross fixed assets: Coming to our example, to make soap, the company needs a plant. It also requires some land along with other infrastructure to set up an office. Other facilities like pipelines and waste disposal systems are also essential. These together constitute the gross fixed assets of the company.

Accumulated depreciation: But nothing lasts forever, the assets wear and tear and need to be replaced at a future date. So, every year, an amount is set aside to meet these expenses. This amount is known as depreciation charges for the year. And the cumulative amount collected for the given period shows up in the balance sheet as accumulated depreciation.

Net fixed assets: These are nothing but the gross fixed assets less the accumulated depreciation. All they connote is the book cost of the existing assets.

Capital work in progress: When the company grows and expands its operations, there are often unfinished plants, buildings under construction and so on. These are clubbed under capital work-in-progress.

Meanwhile, the plant is ready to commence operations. But can we straightaway get into the act of manufacturing soaps? Not really. Some other current requirements, those of raw materials, need to be met first. The suppliers of raw materials also need to be paid.

Current assets, current liabilities: Liabilities like the creditors (suppliers of raw materials, fuel, etc. on credit) and provisions for tax that need to be paid immediately are called current liabilities. Similarly, there are some current assets. Unlike plants or buildings some assets like debtors and inventory of soaps that are in the company?s godown can be converted into cash more easily. What is crucial here is that the company?s current assets and liabilities balance comfortably; so that it does not face a cash crunch or has surplus of cash. The difference between the current assets and current liabilities is called net current assets.

But all this can happen provided there are funds. So, the company raises funds?

Equity: This is the amount contributed by the shareholders of the company at the initiation of the business. This is simply the number of shares multiplied by the face value.

Reserves and surplus: As we saw in the profit and loss statement, from the total proceeds received, all the expenses have to be taken care of, tax has to be paid, and dividend has to be given to shareholders. The balance is called the retained profit. This is what the company would retain to re-invest in the business to propel further growth. This would get reflected in its balance sheet as reserves and surplus.

Equity and reserves are together known as shareholders? funds?funds at the command of shareholders to be invested in the business. They are also referred to as net worth.

Loans: But the entire business can rarely be funded by shareholders? funds alone. A company usually resorts to debt to bridge the gap between the requirement and the supply. These are called loan funds. Thus, we have the liabilities?funds owed to shareholders and debt holders?

these constitute the company?s debts.

Investments: After the operations start, money begins to flow in. Just like you put your surplus cash in stocks and other investment avenues, so does the company and the amount is shown as an asset (hopefully, the company makes sound investment decisions!).

The statement that takes stock of the operations of the company during the entire given period is called the profit and loss statement.

Profit and loss statement

We are very familiar with the figure called net profit. So, what is the story behind this number? We have to cross several hurdles before we can actually understand what net profit means (remember, it is also called bottom line!). Let us take a fast local and halt at important stations that would help us understand net profit better.

Operating profit: It is one of the prime drivers of profitability at the end of the day. If the company produces 10 soaps at a cost of Rs2, spends Rs0.50 on advertising them and pays a commission of Re1 on each soap to the retailer/dealer, then its total production cost works out to Rs35. It then sells each soap for Rs10, earning a total of Rs100, which is its net realization. But, its operating profit works out to only Rs65 (net realisation minus total production cost). Thus, operating profit is a good indicator of a company?s ability to make money from its core operations.

Depreciation: For its operations, the company uses capital?like plant and machinery. Depreciation is a cost that is charged for use of plants and building. It is not cash expenditure. Any asset?be it a plant or a machinery?eventually wears off and needs to be replaced. Depreciation is an amount set aside every year towards replacement of the assets.

Finance charges: The company requires funds to invest in assets and to run its day-to-day operations. After all, a plant has to be put in place and costs incurred in producing and selling the products, before the company can reach the final consumer?and more importantly, before money can be realized! These expenses are funded by a mix of shareholders? funds (called equity) and borrowings from others (debt). Sometimes, the company might also lease a plant from a different party for a periodic payment (just like you might rent a flat). While the company is not obliged to pay its shareholders (after all, it is their company and hence, its risks and rewards are also their own!), it has to pay for using others? funds. Thus, the company has finance charges like interest and lease rentals.

Other income: While operating income can be viewed as salary, other income can be compared to bonus. The company invests its surplus cash in several avenues like debentures and equity of other companies. These investments yield dividends and interest income, which together constitute other income.

Adjustments for extraordinary items: Sometimes, there are one-time expenses in the form of provisions (for tax, dividends, bad debts, etc.), write-offs (treating some bad loans as permanent losses), etc. Then, there may also be a one-time income from sale of certain assets. All these classify as extraordinary items. While analysing performance, one should discount these items to get a better picture of a company?s business operations.

PBT: After paying for all the expenses, this is what is left in the company?s kitty.

Tax: But then, do you carry your entire salary home? Neither does the company. Based on tax regulations it has to shell out Income Tax ? its contribution to the state kitty.

Net profit: Well, home at last! This is one number that summarises the company?s operations.

Dividends: After paying all the other stakeholders in the business, the company pays dividends to its shareholders. But, how often have you bought a stock for dividend purposes only? If fixed payment is what one is looking for, then there are debt instruments after all! So, how else do the shareholders benefit? They gain from capital appreciation, which is linked to the fortunes of the company.

Thus, we see that a company?s net profit is dependent on several factors and prudent management of each would adds to its growth.

Moral of the story:

- A company invests money in assets to commence operations that are financed through debt and equity.
- Balance sheet gives a snapshot view of a company?s financial health at a particular point of time.
- The profit and loss statement summarizes a company?s operations.

Article 2: Of margins and returns

(Here's how to understand all that go into making a company profitable)

The story so far....
Last time we were introduced to the characters of the story. We also learnt how the balance sheet of a company is a snapshot view of its assets and liabilities. The profit and loss statement, we saw, takes stock of a company's operations for a given period of time...

Here, we will learn how the various characters interact among themselves.

We all dream of owning a stake in a profitable venture, don't we? But, what are the ways in which we can judge a company's profitability?

Well, we will need to look at concepts like margins and returns.

Margins

It is a set of ratios that talks about the profit generated on sales and helps us to compute what is popularly called "margin" on business activities. Since, it is indicative of profitability of a company's operations, it involves only the elements of the profit and loss statement. The most important margin ratios are:

Operating profit margin (OPM): This is simply operating profit divided by sales. This ratio is indicative of the operating profit generated per rupee of sales in percentage terms. If a company's operating profit margin is 30%, it means that for every sale of Re1, it earns 30 paise after paying for its operating expenses.

Net profit margin:A sibling of OPM, this ratio is net profit divided by sales. It tells us how much net profit has been earned on every rupee of sales generated.

We agree that the margin ratios tell us about the gains from a company's operations. But these operations are financed by the funds of the company's stakeholders. So, we, as shareholders, are interested in knowing how much returns our company generates by using our money...after all, we need to know if we have invested in the right business!

Returns

The "return" ratios tell us how much profits have been generated from the resources invested in a business. A return on net worth (RoNW) of 24% implies that Rs24 has been earned using every Rs100 of shareholders' funds. A company with a higher return ratio (say a 30% RoNW) is able to generate greater profits (Rs30) from every Rs100 of its shareholders' resources. Naturally, we are better off investing in the second company.

By the way, if you remember, we have already spoken about the return ratios at length in our "Market Musings" section in Taking Stock dated 5-12 November, 1999.

Meanwhile, as we said last time, there is not just any one formula that drives profitability. Several factors contribute to a company's overall profitability. And one such factor is the company's efficiency, which basically indicates how hard the company makes its assets work - to generate higher returns.

Efficiency

Most of us would remember eyeing the top rankers in our primary schools with envy and wondering how they managed the high grades. We would also remember our mothers explaining that they managed to do so because they used their time wisely. Well, the same holds true even in businesses.

A company needs to use its assets smartly to beat its competitors. And prudent utilization of capacity is one way of staying ahead in the race. Let us take the following example: while ACC utilizes only 80% of its total capacity, Gujarat Ambuja Cement operates at a utilization level of over 100%. This is one of the reasons why the latter is viewed as the most efficient player in the cement industry.

Another efficiency parameter that is useful is the assets turnover ratio.

Consider this very familiar scenario: Pepsi Cup Finals. A 50-over, one-day match. India needs 150 runs from a limited 141 balls to win. Batsman A has scored 63 runs off 92 balls while B has managed 41 runs off 42 balls.

So, whose batting would you rate as better? I am sure that B will be your choice because he has played efficiently--it is, of course, possible that his score has been replete with 4s and 6s (sounds like Tendulkar, doesn't he?). Player A, on the other hand, has consumed a lot of balls and produced fewer runs.

The same analogy can be extended to companies as well! Continuing with the previous example-Gujarat Ambuja has a capacity of 5 million metric tonnes per annum (MMTPA) (if you go to buy such a plant in the market, it would cost you about Rs1750cr). It generated a sales turnover of Rs1250cr in 1999.

On the other hand, ACC has an 11.4 MMTPA capacity (would now cost about Rs3990cr!) and it generated sales of Rs2607cr in the same year.

ACC makes Rs228cr per million tonne of capacity, while Gujarat Ambuja makes Rs250cr. Clearly, though ACC has larger capacity and bigger sales, Gujarat Ambuja makes cement more economically and gives better value to its shareholders. No wonder then that it commands

a premium of other cement companies!

But efficient use of assets is not the only key to success. Sound management of cash for one's day-to-day operations is equally essential. Students of finance like to call it "working capital management".

But enough for today. We'll go into the details of working capital management, and some more concepts, in our next classroom session.

Moral of the story:

- To understand the profitability of a business we look at margins and returns.
- While margins indicate the share of revenues left after paying the expenses, returns reveal the profit generated on the funds invested in the business.
- But several other parameters also impact profitability.
- Better and efficient utilisation of assets contributes to higher profits in the long term.

Article 3: Keep the kitchen fire burning

(No cash? Left your wallet at home? A company without ready working capital faces the same problem)

The story so far...
We first familiarized ourselves with the various characters-balance sheet, profit & loss statement, etc-and then saw how these characters interact among themselves to indicate the level of profitability of a company.

Taking the story forward, we now take up the issue of working capital management, as promised last time.

Working capital management

Working capital is important for us as well as companies

Have you ever left home without your wallet? If you are among those who have not had the misfortune, then try it. On a normal day, you might need cash to pay for your bus/train ticket, for your lunch/dinner, buying vegetables & groceries. Not to forget, some flowers for your better half on the way back home. Life can be quite difficult without some money in

your pocket.

While all these expenses recur on a daily basis, you do not get paid on a daily basis. Most probably you have your salary credited to your bank account at the end of every month. In other words, you have a mismatch in cash flows. Thankfully, resolving that is not too difficult. The money in your bank will be used gradually during the month to pay the school fees, pay for the groceries and in general run the house. Some of it will get saved and might get invested in the bank or in the stock market (if you read our Taking Stock reports regularly!). So you need to manage your affairs diligently till the next pay cheque comes in.

Similarly, a company has day-to-day activities that need to be paid for. Buying office supplies, paying for air tickets, freight costs and, not to forget, paying your monthly salary, among others. It also needs to maintain an inventory of raw materials and finished goods to keep its factories running and the customer's demand satisfied. Last but not least, the company might be selling on credit, in which case the cash from the sale of its product will flow in with a lag.

To do all of this-meet day-to-day expenses, maintain inventories and sell on credit-the company needs cash. Now, it could get its suppliers (who supply it with raw material) and the travel agents (through whom it books air tickets) to offer a credit period as well. But that is unlikely to be enough. It will still need to arrange for funds to meet this working capital requirement. So there you have it-working capital is nothing but the capital that must be deployed to enable the business to run without being disrupted by a mismatch in cash flows.

But excess working capital can pull down profitability

Unfortunately, while working capital is a must to keep the company going, it is also an inefficient use of the company's resources. In the sense that the funds that are deployed in this working capital do not in anyway add to the profitability of the company, though they do aid the flow of operations. However, if a company could manage its cash flows in such a way that mismatches are minimal, it also means that it requires less capital to run the business, as working capital requirements would be low. Thus making the business more profitable.

To put things in perspective, let us quickly run through the elements of working capital for a company. Among the Current Assets in the balance sheet, we saw that there is the pile of inventory lying in the godown, the debtors who are yet to make the payments, loans and advances that have been made (may be to subsidiaries), and the cash balance in the bank.

Current Liabilities similarly include the creditors lining up outside the gate for their payments and the provisions that have to be made for taxes, dividends and so on. The difference between Current Assets and Current Liabilities is called Net Current Assets. But one important point to note here is that, excluding cash, the rest of the Net Current Assets (accountantspeak for working capital) needs to be funded from some other source.

Time to see some examples, to help you appreciate the need for efficient working capital management.

HLL	1999	1998	Godrej Soaps	1999	1998
Sales Turnover	10203	8333	Sales Turnover	918	768
Inventories	1146	1045	Inventories	103	113
Sundry Debtors	193	145	Sundry Debtors	114	62
Cash and Bank Balance	660	575	Cash and Bank Balance	17	30
Loans and Advances	610	437	Loans and Advances	110	86
Current Assets	*2609*	*2202*	*Current Assets*	*345*	*291*
Current Liabilities	1878	1674	Current Liabilities	154	79
Provisions	525	406	Provisions	16	23
Current Liabilities	*2403*	*2079*	*Current Liabilities*	*170*	*102*
Net Current Assets	**206**	**122**	**Net Current Assets**	**175**	**189**
Current Ratio	**1.1**	**1.1**	**Current Ratio**	**2.0**	**2.9**
Quick Ratio	**0.6**	**0.6**	**Quick Ratio**	**1.4**	**1.7**
NCA / Sales %	**2**	**1**	**NCA / Sales %**	**19**	**25**

HLL's Net Current Assets as a percentage of sales is a very small amount (2%), while it is nearly 20% for Godrej Soaps. Normally, the company funds this shortfall through short-term bank borrowings and ends up paying interest for them. If this shortfall is to be funded through borrowings at, say, 20%, then look what happens to the interest outgo. Godrej Soaps would need an amount to the extent of Rs35cr (3.8% of sales), while HLL would need Rs41cr (only 0.4% of sales) for funding Net Current Assets.

The liquidity angle

So, the closer your working capital is to zero, the better. But there is another angle to efficient working capital management-and that is liquidity. This is because if working capital is inadequate, there are several things that can go wrong. The company might not be able to maintain a sufficient level of inventory-which might not be able to meet a sudden burst of demand. Then again, the company might be unable to extend a credit period to its debtors-those dealers and retailers who directly deal with the customer.

But how exactly do we measure liquidity? There are some ratios that tell us if the company has a "comfortable" liquidity position (by the way, liquidity simply means cash or cash equivalents for its daily routine).

Current Assets/Current Liabilities: The ratio of Current Assets to Current Liabilities (known as Current Ratio) suggests the nature of balance between the current requirements and current availability of cash. A very low ratio implies a risky position when the company has barely enough to meet the needs (imagine you have to go to Vashi from CST and you have just enough in your pocket for the train and auto fare). Similarly, a very high ratio could imply that there is either high inventory (which might be the result of the company not selling its goods) or debtors (who have not paid on time)...

Quick Ratio (Current Assets less inventory/Current Liabilities): But sometimes, there may be a pile-up of inventory, which the company is unable to sell for some reason. Then, the very purpose of it being called a Current Asset (which can be converted to cash) is defeated. So, in order to account for this, we deduct the inventory from the Current Assets. This ratio is called a Quick Ratio and indicates how much of assets can quickly be converted to cash to meet any current liabilities.

But how high is "high" and how low is "low?"

Valid question. That depends upon the nature of the business.

Godrej Soaps' liquidity position, prima facie, looks better than HLL. But this requires additional funding. Which in turn means an interest outgo on the borrowings and which thus affects the coveted profitability!

Thus, while a company needs to maintain a comfortable level of liquidity, it cannot overlook the impact on profitability due to the high level of liquidity. This simply means that the company has to do a tightrope walk and identify for itself the correct match.

Moral of the story :

- Prudent management of Working Capital is essential for smooth operations.

- But too much investment in Working Capital requires funds, thus affecting profitability.

- A company has to achieve a balance between not being starved of funds for daily needs and at the same time not having piles of cash sitting idle in the bank.

Now that we have looked at working capital management, we must tell you about a new character- Cash Flow. Every person who has ever done anything related to finance will swear by it.

Article 4: Tracking cash flows

(Amongst the strongest indicators, cash flow is the one that puts things in the right perspective)

n this lesson, we will deal with cash flow-a parameter that is an all-time favourite among the wizards of the finance world. We will shortly know why.

Consider the following examples:

Modern Mills
It has recorded a total income of Rs49.82 cr. Its net profit is a neat Rs.13.6 cr. Wow!!

The OPM and NPM of this textile company (no, it is not into software) will put even the likes of HLL and Infosys to shame. But dig a little deeper into its total income and you will see that the sales turnover is just Rs8.21cr while there is an increase of Rs40.26cr in its stock. This simply means that the company's goods are lying unsold!

Shree Krishna Petro Yarns
So what if it had a marginal drop in profits this year, it has been showing consistent profits . But why are its margins dipping? Why is the interest burden rising?

A look at only their income and net profit figures can be very misleading. There is no dearth of companies who put all their creativity to accounting for their financial numbers. Hence, we need to look at a more honest number that is called cash flow.

Cash flows
Most transactions in life (whether it is in ours or in the company's) can be broken into two parts: A pays some cash to B, and B gives A some goods/services in return.

We can prepare a neat little sheet jotting down only the cash transactions. Remember, only those entries make it to this statement that involve actual flow of cash from one party to another. We will call it the cash flow statement, for the sake of simplicity.

Presented below is the cash flow statement of Sree Krishna Petro Yarns.

Financial Year	1999	1998	1997
PBT	49	44	39
Adjustments for non cash items	24	24	9
Operation profit before WC	73	68	48
Adjustments for Working Capital	-103	-77	-58
Interest, taxes paid	-13	-4	-1
Extraordinary items	0	0	0
Net Cash from operations	**-44**	**-13**	**-11**
Investment Cash Flows	**-17**	**-18**	**-10**
Financing Cash Flows	**53**	**30**	**15**
Equity and Preference Capital	2	0	6
Debt	56	33	14
Dividends	-4	-3	-5
Debt / Net Worth	0.37	0.24	0.23
CAGR of Debt over past 2 years	62%		

To prepare a cash flow statement, we note down the inflows and the outflows of cash pertaining to any transaction.

Let's try and make the cash flow statement of a company. We need to start by taking stock of the cash that is generated from the company's operations during a year. We get this simply by deducting its actual expenses from its revenue streams. But there are some expenses in its profit and loss statement that do not involve a cash outgo. For instance, depreciation is an amount that the company keeps aside to replace its assets in future. Since it doesn't involve actual outflow of funds, it does not feature in the cash flow statement. The profit after taxes adjusted for the non-cash expenses and incomes is called **gross cash from operations**.

During a given year, the company has to invest in working capital-to carry out its day-to-day operations. It needs ready cash when its inventory lying in the godown increases or when its debtors fail to pay up on time or when its suppliers pester for fast payment. Whatever

change occurs in these components during the year marks the net outflow or inflow of cash. And, since they pertain to the direct operations of the company, they are adjusted (added or subtracted as the case may be) with the gross operating cash flow. The end result is the **net operating cash flow**.

This is where a stark lesson dawns upon us. Shree Krishna Petro Yarn has been increasing its profits for the past three years. Great company, is it? But, hang on. Just have a look at its cash flows! Its profits entail some costs. Interest cost has been rising consistently. To add to the burden, more and more cash is getting tied up in working capital. So, at the end of the day, the company's operations are a drain on its resources. A negative net cash from operations means that the company **needs** additional cash for its operations!!

There is more to the story...
During the year, the company makes investments-maybe in plants or perhaps in shares. These expenses are grouped under **investment cash flow**.

In our example, the company has net investments of Rs17cr; which indicates a cash outflow from the company. But what on earth does it mean? The company has made negative cash from its operations; which means its operations have not stabilized to yield cash. And yet, it is still making more investments. Where does the money come from?

Not all the investments need to be funded through internal operations. To bridge the gap between its operating cash flow and investment cash flow, a company needs external funds. These are called **financing cash flow**.

Shree Krishna Petro Yarn has resorted to external capital-to fund both its operations and investments. It has to! Another look at its cash flow and we see that its debt is increasing every year. Now we know why its interest cost is rising by the year!

So, there you are with three streams of cash-net cash from operations, investment cash flow and financing cash flow. Add them together and you have the net cash flow for the year. Our simple cash flow statement neatly summarizes where the rupee comes from and where it goes.

From the cash flow statement we get a clear picture of whether a company's operations are generating cash, where and how it is spending the rupee and how it is financing its activities.

There are some important lessons that can be drawn now. A company might show a neat little profit. But profit is an accounting concept. I might sell you a book but you might pay me after six months. While I might show it as revenue right now in my books, my cash inflow will actually happen after a lag. During this time, I will have to look for funding from some outside source to keep me going, and pay interest on it!

At the end of the day, it is important to see how much of cash a company has on hand. Hence, it is always wiser to dig and look at cash flows. Sometimes, a company's operations might not be generating enough cash, money might be flowing out as loans to subsidiaries and the company itself might be borrowing to finance its activities. Then again, it might change its depreciation policy, write off some of its debts and so on; all these impact its accounting profit. Cash flows put things in the right perspective.

Moral :

- Cash flow statement records the details of where a rupee comes from and where it goes.
- Cash flows can be of three kinds-operating, financing and investment, thereby summarizing the entire gamut of a company's activities during a given year.
- The beauty and power of cash flow lies in its simplicity. It records only cash transactions and hence, exposes the chinks in the reported numbers.

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Chapter 7: Valuing Equities
PE, PEG, PBTàletters everywhere. Your survival kit for understanding analyst jargon...

Article 1: *Yeh* P/E *kya hai?*

(This is the most tracked ratio in the market. And possibly the least understood..)

Today we commence our statistical journey into the world of analysis. In this edition we are taking up the subject of Earnings Per Share, EPS in short and PE or Price-Earnings ratio. Rings a bell, does it?. Yes, this is the most tracked ratio for determining the value you are paying for a stock.

Here?s a piece of conversation that Manubhai, head of a big brokerage firm, has been a part of umpteen times. The novice investor seeking his guidance this time is Ramesh.

Ramesh: Manubhai, I read in your report yesterday that you are recommending HLL. And

your report said you like it because it is cheap. But it is 2400 rupees per share. Better than that, why don?t you recommend Henkel Spic instead. It is only 130 rupees.
Manubhai: Ramesh, price mut dekho. Price earnings ratio dekho. Speak to my analysts. They will explain?you cannot judge cheap or expensive by price.

What is a price-earnings ratio?
The normal reaction when we look at share prices is?a Rs40 stock is cheap, and a Rs 1,000 stock is expensive. Let?s say we were buying onions. One subziwala said Rs 20; another said Rs 100. Would we simply jump and say that Rs 20 was a great deal? What if one was saying Rs20 for half kg of onions and another was offering 10kg for Rs100?
There?s a lesson here: Price itself is not enough?it actually takes a ratio to determine cheap or expensive. And the ratio is **price per unit** of whatever we are buying.

But someone might still say that stock prices are already ?per share?. So Rs40 per share and Rs1,000 per share should be comparable. This is where we need to look beyond the piece of paper (or with demat stocks, not even the paper). What are we buying when we buy a share?

When we buy a company?s share, we buy a share of the company?s **profits**, both current and future. As an example, let?s take HLL. During the period Jan 1998 to Dec 1998, HLL made a **net profit** of Rs805cr; it currently has a total of 20cr shares. Each share (and therefore its owner) owns Rs40.3 (Rs805cr divided by 20cr shares) of HLL?s **net profit**. This Rs40.3 is then referred to as **earnings per share** of HLL.

So, when we buy one share of HLL, we are buying Rs40.3 of net profit, together with the right to future net profits. If HLL were to make a net profit of Rs1000cr this year, and were to issue another 5cr shares, the earnings per share for next year would be Rs40:
Rs1000cr divided by (20cr old shares + 5cr new shares = 25cr shares) = Rs40 per share

Keeping this in mind, now let?s go back to our original problem. How do we figure out if a stock is cheap or expensive? If we buy a share for Rs1000, and the earnings per share for the company is Rs100, then we are paying Rs10 for each rupee of net profit we buy into. If we buy a share of another company for Rs40, which has an earnings per share is Rs2, then we pay Rs20 for each rupee of net profit we buy into. Which one is cheaper?

When we look at a share price, we should also look at earnings per share. Looking at both of them is the only way to determine whether the share is cheap or expensive. To make it easy for themselves, research analysts have created a simple formula:
Price Earnings Ratio = Price per share/Earnings per Share
where, Earnings per Share = Net profit /Number of issued shares
So when they want to know whether a share is cheap or expensive, they just calculate this ratio. And lower the ratio, cheaper the stock is.

Just to summarise:
When we buy a share, we actually buy a share of the net profit of the company. How much depends on two things?how much net profit it has made, and how many shares it has.
Net profit per share is called earnings per share or EPS, and is what the owner of one share is entitled to out of the total net profit made by the company.
The price per share divided by the earnings per share is the Price Earnings Ratio (PER) and is a measure of how much we pay for each rupee of net profit of the company we buy into when we buy a share.

But a low PE is not enough
Is a stock which quotes at a lower PE always a better buy? Not necessarily. Let us just step back in time to January 1998. Punjab Tractors was trading at Rs628 which placed it at a PE of 23, whereas Telco was trading at Rs300 which placed that stock at a PE of 10. So, which stock would you prefer to buy? Just take a look at the chart down below and it is quite clear that while you would have made money by buying Punjab Tractors, you would have lost money by buying Telco.

So what went wrong? The market always looks at the future, not just at the past. The PE ratios mentioned above were based on the profits (EPS) earned by the company in the year already past. But the market looks to the future. Look at the table down below and you will see that Punjab Tractors? PE is much lower when you look at its future earnings.

Punjab Tractors & Telco?A Comparison

	Market Price		**EPS**			**Market Price**
	Jan 1998	**1997**	**1998**	**1999**	**CAGR**	**1999**
Punjab Tractors	628	27.01	46.47	59.39	48	1061
PE		23.3	13.5	10.6		
Telco	300	29.0	11.0	3.5	-65	233
PE		10.3	27.3	85.7		

In the following two years, Punjab Tractors grew earnings by 48% while Telco?s EPS dropped 65%. As a result, in 1999 Punjab Tractors? PE dropped to 10.6 (on 1998 prices) while Telco?s PE went up to 85.7. Now, which one is expensive? All those who did buy into a bargain PE must be ruing their decision.

The point we are trying to convey is that the most critical factor that determines PE is future growth. Higher PEs do not always indicate an expensive stock. That?s where we use the PE? growth ratio (PEG). This ratio enables us to catch stocks with growth, at a reasonable price. The lower the PEG, more attractive the stock and vice versa. We will take up this ratio in detail the next time. We would also look at two other ratios?ROCE and RONW?that also determine PE of a stock.

Article 2: I thought low PE was better

(PEG ratio in detail)

In the last session we covered a key stock evaluation tool, EPS, and how it is to be interpreted through the price-earnings ratio (PE). We also briefly touched upon the relation of EPS growth to PE. We however stopped short of explaining how the same is calculated and interpreted in a real time scenario. Continuing from where we left off, in this issue we take up the PEG ratio in detail and also dwell on the capital efficiency ratios-ROCE & RONW.
What is a stock's PEG ratio?
The objective of the PEG ratio is to attempt to catch a fast-growing stock at a comparatively cheap price. First the formula for calculating PEG. The PEG is calculated by dividing the PE by the forecasted EPS growth.
Thus, **PEG = PE / EPS growth**

This ratio is explained better with a real time example. Let's look at Punjab Tractors and M&M. Over three years (1997-99), Punjab Tractors grew 48% p.a. while M&M grew 4% p.a. While we were buying Punjab Tractors in January 1998 at a higher PE, what we were essentially paying for was the 48% p.a. future growth. On the other hand, a lower PE M&M grew earnings by just 4% p.a. The lower PE was indicative of its slower growth.

		Market Price - Jan 1998				CAGR* to	
			1997	1998	1999	1999	PEG
Punjab Tractors	EPS	**628**	27.01	46.47	59.39	48%	0.48%

	PE			23.3	13.5		10.6	
M&M	EPS	321	20.1	23.8	21.5		4%	4.00
	PE			16.0	13.5		14.9	

The premium or the higher PE values factor in a higher growth rate, rather than indicating that the stock is overpriced. If we had picked M&M over Punjab Tractors purely because of a lower PE benchmark, we would have lost out on the earnings momentum in Punjab Tractors.

What is a good PEG ratio?

PEG ratio is all about catching higher growth at a reasonable price. A value below 1 is generally the thumbrule to indicate a cheap stock. A more accurate way of using the PEG would be to compare the same over companies within the sector to get a realistic result. Take the above example of the two tractor manufacturers. A lower PEG for Punjab Tractors has resulted in a higher price for the stock two years down the road.

After PEG, another factor that is also relevant in determining PE is the capital efficiency of a firm. In analyst terminology, there are two ratios-ROCE and RONW. ROCE is the Return on Capital Employed and RONW is the Return on Networth (shareholders' capital). These are also termed as return ratios.

What does capital efficiency really mean?

Take an option-would you prefer bank interest of 12% or 10%? Pat would come the answer: "12%, why would I invest in lower returns?" Definitely, a higher return on capital is what everyone aims for. In this case, what you are doing is making that little money of yours work harder. The higher interest you earn, the higher the returns, and more the capital efficiency. It is money wisely invested. While investing in a company, have you ever used the same principles and looked at what kind of returns the company is generating on the money deployed? Haven't so far? Well, read on.

While the EPS has its relevance in determining price, the drawback of this ratio is that it takes into account only the equity in computing the ratio. This would present a slightly distorted view, in the sense that the entire shareholders' capital, which also includes reserves, is not taken

into calculation. That's where RONW presents the right picture. It takes into account the entire shareholder capital and returns are calculated on the entire base. This is why this ratio is known as the 'Mother of all Ratios'.

Capital to the company comes in two forms. Debt and equity. The equity portion of the company is contributed to by the shareholders-also the owners. They have a right to the profits of the company and also the accumulated reserves. The cumulative equity and reserves is together classified as Networth, or shareholders' capital. The other part of the fund structure is made up of debt. This is the capital has a cost that is paid for. The cost is commonly known as interest.

From the owner's perspective, the money which is residual with the company after meeting all its expenses is his final return. The efficiency of his capital can be gauged from the RONW ratio. This ratio spells out as to what return the company has generated on the total Networth deployed with the company during the year. RONW is calculated as:
RONW = PAT/Networth

Where, Networth = Equity + Reserves

While RONW would only cover the returns on shareholders' capital, the ROCE would broaden the base and calculate the return on the total capital employed in the company. Thus, while calculating this ratio, we take a much broader denominator into account, which is Networth and the debt. Thus,

ROCE = PBIT/Total Capital Employed

Where PBIT = Profit before Interest and Tax; and,

Total Capital Employed = Networth + Debt = Total Assets.

To calculate this ratio, we have to add back the cost of the debt taken, i.e., the interest. The ratio calculates the returns on all the contributors of capital.We look at PBIT as this reflects the returns earned by the business before accounting for costs related to the funds deployed in the business.

How relevant are these ratios in determining PE?

Like we mentioned earlier, both these ratios do play an important role in determining the PE. A company with a steady return is valued higher than that with an inconsistent performance. Let us again compare M&M and Punjab Tractor on these ratios.

In 1997 and 1998, Punjab Tractors traded at a premium-a higher PE. That was due to the higher RONW that the company actually generated. The premium that the stock got was

largely because it was more capital efficient. Did something go wrong in 1999? The premium on PE actually went in favour of M&M. Well, nothing wrong here. RONWs are indicative of a company's capital efficiency. The external factors that did come into play were the higher growths that M&M was achieving currently and the fact that the company has a software subsidiary which has the potential of turning into a huge one-time cash flow.

What is the right ratio?

Here again, there is no real benchmark for the right return ratio. This would work well in an intra- industry comparison, i.e., compare companies in the same business to determine the one with the most efficient finance structure. As in the table above, higher the ratio, better is the PE multiple.

By now, we have compiled the critical factors that actually determine the PE of a company. In the next session, we will take a look at other valuation methods of Book Value, Enterprise Value and Replacement Cost and learn how to interpret them.

Article 3: Alphabet soup for valuation

(You are already familiar with EPS, PE and PEG. But how about EV and RC? Did you know that a stu...)

By now you must have already learnt something about a few ratios (EPS, PE, PEG et al) in this endeavour to understand valuation of equities. This time, we will take you through a few more tools in an analyst?s armoury.

Book Value Per Share

Along with Earnings Per Share (or EPS, as we now know it), the other most talked about ratio is Book Value Per Share. This is a value stock picker?s dream number.
As the term signifies, Book Value Per Share is the value per share as per the book. That didn?t help, did it? By book, we actually mean the Balance Sheet. The Book Value represents the value of a share as mentioned in the Balance Sheet. It is calculated as follows:

Book Value = Networth/Number of equity shares;
where, Networth = Equity + Reserves

Apart from just the equity, Book Value represents the reserves that the company has accumulated through the years. Book Value thus represents the networth per share.

How does one use Book Value to evaluate a stock?

The Book Value is always evaluated in relation to the current market price. This ratio is known as the P/B, which is Price to Book Value.
Thus, **P/B = Stock Price/Book Value**
So what is the right P/B at which to buy a stock? Unfortunately, there is no ?right? answer. As a thumbrule, however, a ratio lower than 1 is considered attractive. Put simply, it means you are buying the stock for less than its networth.

However, even this thumb rule comes with a caveat. Let me explain why. As an equity investor, wouldn?t you expect your company to earn a RONW higher than, say, the 15% return that an ICICI bond provides? Our minimum expectation from any company is that it earn at least a 20% RONW. However, when a stock has a much lower RONW, then it is only fair that the P/B reflect this poor return. In other words, if a company has a RONW of only 10%, then we would find the stock attractive only at a P/B of 0.5. The reason being that at the market price you are paying to buy the stock, the effective RONW would be 20%. Hence, we recommend that the thumb rule be used only in conjunction with the RONW rather than in isolation.

So, what of stocks that trade at a P/B > 1? Are they expensive? Unfortunately, there are drawbacks to this thumb rule. The market price of a share reflects not just the accumulated networth (book value) but also the future earnings of the company. A number of qualitative factors, like the management?s vision, the company?s distribution and brand strength, etc., are also reflected in the price. These intangibles as well as the future earnings potential of the company are not reflected in the balance sheet. And hence, neither does book value per share capture these intangibles. That is why many companies trade at a significant premium to their book values. That doesn?t mean that the stock is expensive.

Let?s take the example of HLL. Given that its current book value is only Rs85, the stock looks frightfully expensive at its current P/B of 30x. But before you jump to any conclusion, remember that this price takes into account the intangibles - HLL?s distribution base, its brands and also the quality of its management. Remember that HLL spends a considerable sum of money (Rs669cr on advertising in CY1998 alone!) on building and maintaining its brands. None of this expenditure, which has gone into creating an intangible asset, is reflected in its balance sheet. The other reason why the market values HLL at such a high premium to book value is its superlative financial performance and capital efficiency. HLL has grown profits at an average of 45% per annum between CY1993 and CY1998. It has also consistently increased RONW, from 35% in CY1993 to 54.57% in CY1998. It is these factors that make the stock trade at a significant premium to book value. Thus, despite quoting at a value greater than book value, the stock has consistently been hitting new highs.

On to Enterprise Value...

Let?s now move on to the concept of Enterprise Value. Enterprise Value is the sum total of the market capitalisation of a company and the total debt on its books. And what is market capitalisation?
Market capitalisation is simply the market price per share multiplied by the number of outstanding shares. This, in other words, is the total price that any buyer would have to pay if he wished to buy the company lock stock and barrel and pay back all the outstanding debts of the company.

The EV is typically used either in conjunction with PBIDT - profit before interest, depreciation and tax - or with replacement value. Let?s say you decided to buy out all the equity of a company and repay all its debts. What would your return be? Your return would be the profits made by the company before interest, depreciation and tax - in other words, PBIDT. Obviously, if you want a return of 20% on the funds you have deployed to buy this company, then the maximum price that you would be willing to pay would be = 5x PBIDT. The analyst community calls this the EV/PBIDT ratio. This ratio is particularly useful when trying to estimate the value of the company in a possible takeover situation.

...and Replacement Cost

In estimating the value of a company in a takeover situation, EV is also used in conjunction with Replacement Cost. Replacement cost is the cost at which a similar asset can be replaced (built) at current prices. Thus, if the EV of a business is equal to its replacement cost, the business it is fairly valued; if it is lower, then it is undervalued, and if it is higher it is overvalued. The lower the enterprise value as compared to the replacement cost, higher are the chances of stock appreciation.
Regular readers will recall that we had used a similar argument in one of our live recommendations - Priya Cements. We had argued that the stock was the cheapest in the sector based on the replacement cost argument:

Priya Cements? Enterprise Value and Replacement Cost	
Equity (cr)	2.21
Asset Replacement (Rs cr/ tonne)	300.00
Market capitalisation (Rs cr)	84.02
Current capacity (mn tonne)	1.2

Debt* (Rs cr)	147.00
Replacement Cost (Rs cr)	360.00
Enterprise Value (Rs cr)	231.00
Discount (%)	35.83

Obviously, larger the discount to replacement cost, the more attractive the stock would be. Well, we have now taken you through a number of important ratios in this endeavour to understand valuation of equities. While this is not a comprehensive list, it is a handy tool-kit which will help you in investment decision-making.

Article 4: Meet EV and EBIDTA

(Allow us to present two more members of the Alphabet soup: EV and EBIDTA. What do they do?)

PE, BV, EV, RC - these alphabets keep popping up in discussions about stocks and stock markets. If you do not feel at home in the maze of these alphabets and acronyms, then you might want to take a look at an earlier discussion - "BV, EV aur RC: The Alphabet Soup of Valuation".

This discussion is devoted to the concept of enterprise value (EV) and how it helps in valuing companies.

Enterprise value does just what its name suggests that it does - it seeks to find the market value of the enterprise J. Simple isn't it?

But remember that the operative word here is **'market'**. The enterprise value at any instant of time tells us the value of the firm **as the market sees it**. It does not say if that is the fair value of the company nor does it concern itself with the balance sheet value of the company.

It says if you were to buy over the company what would you need to pay today. You will need to buy all its equity at its market price. Also since you are buying over the company, you assume the responsibility for all its debt. And finally, the company has some cash and investments that you inherit, and your cash outflow stands reduced by that amount.

Thus the Enterprise Value is market value of equity plus market value of debt minus cash and investments.

The market value of equity is the current market price of a share multiplied by the number of shares outstanding. This is nothing but market capitalisation. It goes without saying that the market value of equity is what undergoes a continuous change with the change in prices. And due to this component, the enterprise value changes continuously.

As for debt, normally, the value does not change. Mind you, during periods of inflation, the value of debt instruments may fluctuate wildly. For firms, however, much of the debt consists of term loans that are unlisted and hence the value does not undergo much change. It is quite fine to take it as shown in the company's books.

Thus **Enterprise Value** = **Market Capitalisation**
+ **Debt**
- **cash and investments**

What if the company does not have debt, like most software companies? Then the enterprise value is equal to the market capitalisation...

Take a look at Table 1 -

(Rs cr)	Infosys	Satyam
Equity	33	56
No.of shares (cr)	6.6	28.1
Mkt Cap	47692	9730
Add Debt	0	291
Less Cash plus Investment	446	163
Enterprise Value	**47529**	**10021**

The enterprise value for Infosys, for example, is Rs47529cr. This is higher than the balance sheet value, which is Rs2,689cr. Also, the EV is by no means the fair value. The fair value, which can be calculated using the discounted cash flow model - may be lower or higher.

Now that we know the enterprise value of Infosys is Rs47529cr, what do we do with it? Enterprise value cannot be interpreted on a stand-alone basis.

Just as price or market capitalisation cannot be interpreted by themselves. To make sense out of a company's stock price, we compare it against the earnings per share or the book value per share - our very own P/E and P/BV.

Generically speaking, we are comparing a market variable with an operating variable. A

good measure while valuing companies is to evaluate the enterprise value in relation to the EBIDTA.

EBIDTA?

EBIDTA stands for 'Earnings Before Interest, Depreciation, Tax and Amortisation'. It is the total income that a company has generated from its operations minus its operating expenses. EBIDTA is also known as the operating profit.

Instead of 'earnings', some people prefer the word 'profit' and hence EBIDTA is also referred to as PBIDTA. "What's in a name!" as Shakespeare would say.

Table 2 shows the position of EBIDTA in a typical Profit and Loss Statement...

(Rs cr)	Infosys	Satyam
Sales	921	679
Operating Expenses	543	426
EBIDTA	**379**	**253**
Interest (I)	0	41
Depreciation (D)	53	71
Tax (T)	40	6
Extra Ordinary Items	8	5
Profit After Tax	294	140
Amortisation (A)	0	0

Wondering what's amortisation?

Voila!

We have EV and we have EBIDTA. EV tells us the market value of the company. EBIDTA tells us the operating profit of the company.

Just pause and reflect what they both together tell us....

The next time around, we will enjoy their *jugalbandi*...

Article 5: Valuing intangibles

(Intangibles are to value what love is to happiness. Don't believe us? You will soon)

Remember the game of association? Where one player has to say a word and in response the other has to say another word that the first one brings to his mind instantly. Example - for "flower," your response might be "rose", or "exam" could mean "prepare" to you. So if you extend this game, "Reliance", your answer would most likely be "big."

Not surprising, since Reliance Industries has plants that feature among the largest in the world. The group contributes 3% to India's GDP and 5% to the country's tax collections - after all it has annual sales of Rs55,000cr, a net profit of Rs4,800cr, and market cap of Rs65,000cr.

Reliance Industries alone has a sales turnover of Rs15847cr, net profit of Rs2403cr, total assets of Rs25503cr and market capitalisation of Rs36455cr.

Compare that with another company that has risen to excellence - Infosys. It has an asset base that is all of Rs833cr, sales turnover of Rs921cr and a market cap of about Rs49,000cr!!

Now for the glaring comparison: for every Re1 of Reliance's assets, the market is paying Rs1.43 while for every Re1 of Infosys's assets, the market is paying a whopping Rs58.80. The gap in the market cap-to-asset ratios of these two companies is stark. And that's putting it mildly.

What is it that the market sees in Infosys? We'll see that soon?.

The intangible factor

In our basic discussion on companies, we saw that you can't make money out of nothing. A company first invests in building assets, then these assets start working to produce the company's goods (or services). The company markets these and earns revenue.

There is investment required to build assets, and assets have the ability to generate cash flows. This is the simple concept of investing in a business.

But looking at the above example from another angle?.

Out of Re1 of assets, Infosys is generating sales of Rs1.1. Reliance is able to generate Rs0.6 of revenues from a similar amount of assets. But Infosys can't be making money out of nothing. Clearly, there is some asset that Infosys is using which the market values and which is not evident in Infosys' balance sheet. These "invisible assets" are called intangibles.

Intangibles, as my first grade teacher taught me, are things you can't perceive with your five senses. In the context of a company, "intangibles" are the assets that contribute to the creation of value but are not shown in its balance sheet.

Now what are the assets that feature on the balance sheet? Plants, equipment, buildings, land, investments, cash, inventories and so on. These are called tangible assets. There are some assets that are not represented in the balance sheet and are called intangibles.

But like tangible assets, intangible assets require investment too and they contribute to cash flows.

What do you value most in Infosys?
It's not its sprawling offices in various locations but its 5400-odd strong skilled workforce that has helped Infosys create the brand equity it has in the Indian software service industry. It is Infosys's ability to attract, develop and retain talented employees that has earned it supernormal growth in revenue, profits - and of course stock value - in the past few years.

With its skilled manpower Infosys has built a pool of knowledge, which is driving its value. Thus its investment in human resources is an important asset today that drives the company's cash flows, though this is not accounted for in its balance sheet.

Does that mean if Infosys adds 1000 people and Satyam Computers add 1000 people each, then does that mean that they are adding similar value? No, it depends on the company's ability to utilise the workforce the most productively. For instance, Infosys earns revenue of Rs0.17cr per employee compared to Satyam's Rs0.13cr per employee. This in turn is a reflection of the management's ability to best utilise its assets.

Brand differentiates a product from the rest and fetches a premium
Much has been said and written about the power of brands. Having a facility to manufacture and market soaps is a very small part of the story for Hindustan Lever. What is difficult is getting hold of the customer's mind in a highly competitive market where loyalty is transient.

Did you know that the cost of making a bar of soap is just 25% of its MRP? The rest, and the most, of the cost difference is accounted for by the selling and distribution expense and the margin. This is the extent of the mark-up that a company is able to generate on a product like soap.

A brand creates a certain promise that distinguishes itself from the rest and achieves two important objectives (among others). It helps the product command a premium and it brings in a customer's clout. Not surprising that companies are trying branding exercises in everything - even in classic commodities like sugar and cement!

A good brand can be a great source of cash flow and hence is an asset. And like tangible assets, even brands require investments. Look at the ad spends of the leading FMCG companies. Colgate spends 18% of its sales turnover on advertising - all towards building its brands.

IPRs and patents give exclusivity and drive cash flows

Intellectual property rights are exclusive rights that a company owns for the manufacturing or marketing of a particular product that is a result of its own research. This feature enables a company to earn higher profits over a long time frame.

Companies that have a rich bank of IPRs or potential IPRs have been rated well in the market. For instance, Dr Reddy's Labs has evolved a drug out of its own research. So it holds the patent for the new drug, which it has licensed to Novo Nordisk to bring the drug to the next stage. In turn, Dr Reddy's Labs receives milestone payments.

So you see that patents are also a source of cash flows. Also, these patents haven't come out of thin air. Dr Reddy's has invested continuously in R&D over the past several years. Hence, although patents do not find pride of place in a balance sheet, these are valuable assets for the company.

Innovativeness helps a company to stay ahead

What the market also values is a company's ability to start imaginative new products and services ahead of its competitors. This trait always gives it an edge.

When the market leader in the business, State Bank of India has been trading at a price-to-book (link) of 1 or less, HDFC Bank has commanded a P/BV of over 8x. And it has sustained its premium over SBI for a fairly long period of time.

The reasons are not far to seek. While SBI might be the leader in size, HDFC Bank has always led the many changes in the banking industry. Talk of new banking products or consolidation in the industry, HDFC Bank has been the trendsetter and the market has valued this intangible in the company. After all, this ability is what has led the bank's 50% plus growth in the past few years while its PSU counterparts have struggled.

Management quality is perhaps the most important factor

By far, the most important intangible asset any company could possess. Having a great idea or a good product is just part of the organisational story. Having the ability to carry it forward and making a first-rate organisation is another - one that requires vision, competence and integrity.

Also, if a great organisation relies on just one person - I am sure you can think of many examples - then there is always uncertainty about the company's direction once the person is no longer at the helm of affairs. Thus, sufficient depth of management is yet another important criteria that a market values.

So undoubtedly, the intangibles count

Outside the balance sheet, there are many assets that are at work for the company, helping it enrich its returns for the shareholders.

A very crucial difference between tangibles and intangibles assets is that there is a limit to how much you can utilise or leverage a tangible asset. You can operate a plant at 100% capacity utilisation. Beyond that it is difficult to stretch it. But for an intangible asset, there is no limit. A brand can be leveraged to a very large extent. The constraint is the size of the market.

So it is clear that we need to value them while valuing companies and stocks. But intangibles have a problem associated with them: they are intangibles J. And hence it is difficult to compute their value.

Taking the example we started out with, it is relatively easy to compute the replacement cost of Reliance's assets and their cash flows. But it is so much more difficult to gauge human resources.

Consider these?

Is adding manpower alone is an indicator of value creation for a software company? By that logic many companies seem to be on a recruitment drive. Why don't they all come up with similar performances?

Does it suffice to be a great brand? Titan was rated as the country's best brand by a leading market research agency. Why then has Titan Industries been showing disappointing performance?

So while we understand that intangibles do matter, the big question is how does one value these intangibles? That's what we will devote the next part to?.

Article 6: Price to Net Asset Value

(Discover the peculiarity of the 'net asset value' that makes it a great valuation tool)

The Net Asset Value is a parameter used to measure the market value of any organisation. Oh! - not market value as in stock market capitalisation, but the current market value of all the assets (fixed assets, cash on books, etc) of the organisation, less any liabilities.

So, does the NAV represent the true value of an organisation?

Well, you could say that the Net Asset Value is a measure of the tangible value of an organisation. It does not take into account intangible values like brand, distribution network, etc. So, to that extent, it does not capture the true value of a company.

Superior measure to Book Value and Replacement Value

Then how is it different from Book Value or Replacement Value?

NAV scores over other parameters like Book Value and Replacement Cost, as it uses the current market value of the asset as a surrogate for the historical cost (as in Book Value) or the cost at which a similar asset can be built at current prices (as in Replacement Cost).

NAV is best used where assets are liquid

The NAV can be calculated only in those businesses where assets are very liquid and can be sold easily. Like a mutual fund. A mutual fund's assets - securities like shares, bonds - are liquid and easily marketable. And their market prices can be gauged at any point in time. Mutual funds determine the NAVs of their investments regularly, as a result.

Similarly, there are other industries where the marketability of assets is very high. Take shipping, for instance. Their prime assets in a shipping company are ships. And ships are traded very frequently in the international markets. In fact, trading of ships is a source of revenue for all the shipping companies. Thus the Net Asset Value of the shipping companies can be easily evaluated.

Also, the prices of the assets keep changing over a period of time.

Thus NAV gives an indication of the worth of the organisation at any given point in time. While prices of assets like stocks that change very frequently need to be calculated on a daily basis, for other assets, value is calculated after relatively longer periods of time. Like in the case of our other example, ships - here, the value of ships does not change significantly overnight.

How to use the NAV to value companies

Thus the NAV is an important benchmark to determine the value of the assets. But how do we use it? NAV is used in conjunction with the market capitalisation of a company. While market capitalisation refers to the price that the market in its combined wisdom is willing to pay for a company, the Net Asset Value refers to the value that the shareholders will get if all the assets of the organisation are sold.

We assume that a company is a 'going concern' and would not, in normal circumstances, dispose off all its assets. The price of the asset/organisation will thus generally be below the net realisable value. In case of a buyout, takeover, or when a party is acquiring controlling interest in an organisation, the purchase value may exceed the Net Asset Value. This is so because in case of a buyout, the buyer pays for the intangibles as well as the expected synergies.

NAV and price behaviour in mutual funds...

Consider the Morgan Fund and Mastershare. Both of these funds are closed-ended funds i.e. they cannot be sold back to the mutual funds till their redemption dates. They can, however, trade on stock exchanges.

	Morgan Stanley Growth Fund	Mastershare
Redemption	Year 2008	Year 2003
Latest NAV	14.98	15.75
Market Price	10.10	13.35
Price/NAV	0.67	0.84
Discount to NAV	33%	16%

The discount to NAV reduces as the fund approaches its redemption date. Consider the case of Taurus Starshare. The fund quoted at a discount of about 30% just three months before

its redemption in March 1999. As the fund approached the redemption date, the price started converging towards the Net Asset Value. And those who bought the fund in January made a cool profit (plus the gains due to the market appreciation in that time period). J

Thus NAV is a very good benchmark in case of organisations that have liquid assets. Compare this with another fund, say Zurich Equity Fund, which can be redeemed at any point in time. The NAV of the fund is Rs19.95 and it can be traded on the exchange at NAV price at any point in time at the prevailing NAV.

... and in companies with liquid assets

Similarly, companies may also quote at a discount to their Net Asset Values. Consider the two shipping companies, GE Shipping and Shipping Corporation of India (SCI).

	GE Shipping	Shipping Corporation of India
Net Asset Value	Rs55	Rs140
Price as on 29.1.00	Rs32	Rs30
Price/ Net Asset Value	0.58	0.22

In case of GE Shipping, the promoters have announced a buyback at Rs42 a share, much above the current market price and closer to the company's Net Asset Value. SCI is also looking to sell 40% of government stake in the company to a strategic partner. Such a sale would happen at a price close to the NAV. In both these cases, the investors have an opportunity to make money. But the upside seems higher in SCI, simply because it is quoting at a steeper discount in the market.

Larger the discount, better the buy

Of course, price/NAV is only one part of financial analysis. For a comprehensive picture, you must delve deeper into the company. However, ceteris paribus, the larger the discount to the net asset value, the more attractive a stock would be to investors....

Article 7: The price-earnings tango

(Why do some stocks have higher PEs? Explore the relationship between prices and earnings)

'Infosys trades at a PE of 100x', scream the headlines.

'Corporation Bank trades at a PE of 3', says another.

Makes you head swim doesn't it? After all, why should one stock trade at 100 times earnings and another at 3 times earnings? Or even, at a more base level, why should one stock trade at Rs7,500 and another at Rs75?

Well if the question on your lips is the latter then we suggest that you first read a story from our archives where we compare mangoes and potatoes. And if the question that's nagging at your pursestrings is the former, then you may want to check on the concept of a PE.

But what we will attempt to do today is try and understand why stocks have differential PEs, based on some simple home truths.

Investing? Look for what you get at the end of it

Let's start with a visit to the first financial institution that most of us interact with in our lifetime - the neighbourhood bank.

What interest rate does you neighbourhood bank offer on a 1 year deposit? My bank offers 11%. Maybe your bank offers the same, maybe it does not. But that's not the point. What does it mean when a bank offers you an interest rate of 11% on a 1-year deposit? It means that if you were to deposit a sum of money, say Rs1,00,000, then the bank would pay you Rs11,000 as interest at the end of one year.

Simple, right?

Now let's say that you have a few lacs of rupees with you and you want to invest it somewhere. Your neighbourhood bank is offering you 11% for a 1-year FDR but you want to get something better. Meanwhile, your friend has managed to find a bank that is paying 20% as interest. He puts a lac of rupees in the bank and gets the FDR from the bank. He refuses to tell you which bank this is or how you can put your own money there, but instead he offers to sell it to you. Some friend, huh?!

Now you know that the best return your money can earn is 11%. Your friend offers to sell the FD receipt to you for Rs1,05,000. Would you invest Rs1,05,000 and buy the receipt? Sure you would - because you would earn Rs15,000 on your investment, which converts into a yield

of 14.25% for you. Whereas if you put the money in your neighbourhood bank, you would earn just 11%.

Rs	Neighbourhood bank	Friend?s FDR
Amount invested	1,05,000	1,05,000
Interest received	11,550	20,000
Refund on Maturity	1,05,000	1,00,000
Total receipt	1,16,550	1,20,000
Gain	11,550	15,000
% gain	11%	14%

The learning is obvious: You are - and should be - willing to pay a price higher than the actual value of the FDR because of the higher yield

How much would you pay for a business?

Let's take this simple homespun learning and apply it in a business situation. There is this company X that has Rs1,00,000 of equity capital (10,000 shares of Rs10) and no debt. It earns a profit after tax of Rs50,000.

As a businessman, you would obviously not be satisfied with a return of 11%. For the risk you are taking, you would want maybe a 25% return. But here is a business that is earning 50%, so you would obviously be willing to pay more than the Rs1,00,000 that has been invested, to buy the business.

Let say that you expect this business to earn 50% this year and 50% again next year and so on and so forth. Then you would be happy to pay Rs2,00,000 to buy the business. You would earn Rs50,000 after tax which gives you the 25% return you want. And since the business is going to earn Rs50,000 next year, you should be able to find a buyer at Rs2,00,000 at the end of the year when you want your money back.

What does this all mean?

You have just learnt that it makes sense to buy a company at Rs2,00,000 even though the actual capital deployed in the business is only Rs1,00,000. Since the company's capital consists of 10,000 shares of Rs10 each, what this means is that you have just offered to pay Rs20 per share to buy it. You have understood the circumstances under which it makes sense to pay a P/B of 2x. (see the table below)

You have also learnt that you are willing to pay four times profits to buy the company or, in other words, you have valued the company at a PE of 4.

Equity capital invested in the business	Rs1,00,000
No. of shares	10,000
PAT (@50% on capital)	Rs50,000
EPS	Rs5
Purchase price of business	Rs2,00,000
Rate of return (PAT/Purchase price)	25%
Purchase price (per share)	Rs20
PE	4.00
P/B	2.00

What if all the profit is ploughed back into the business?

So far we have presumed that the company pays out all the profits it makes. In other words, it pays out the Rs50,000 it has made by way of dividends.

Now say the company decides to keep Rs50,000 and not pay out anything. Next year it would have a capital in the business of Rs1,50,000. Let us say it is able to earn 50% on the capital in the business. So the company would make Rs75,000 as profit. Now how much would you pay for the business?

Tricky, very tricky. But let's try.

Here is a company with Rs1,00,000 as capital. It will make Rs50,000 this year. But I won't get anything because it will keep the money. And next year it will earn Rs75,000, which it is

willing to return and thereafter it will earn Rs75,000 every year. You believe that you will be able to sell the business at Rs3,00,000 two years hence - a return of 25% for the buyer. And you will receive Rs75,000 at the end of next year.

So how much would you pay to buy a business which will give you a return of Rs3,75,000 two years from now. Some simple high school math will tell you that you can afford to pay Rs2,40,000 and you would still be earning a 25% return p.a. on your investment.

For the company in question, Rs2,40,000 amounts to Rs24 per share. In other words, you can afford to pay a P/B of 2.4x and a PE of 4.8x.

Equity capital invested in the business	Rs1,00,000
No. of shares	10,000
PAT (in year I @ 50% on capital)	Rs50,000
EPS (in year I)	Rs5
Equity capital invested in the business (in year II)	Rs1,50,000
PAT (in year II @ 50% on capital)	Rs75,000
Sale price of business (@25% return to the buyer)	Rs3,00,000
Total receivable (at the end of year II)	Rs3,75,000
Purchase price of business today (which yields you a return of 25% p.a.)	Rs2,40,000
Purchase price (per share)	Rs24
PE (year I)	4.80
P/B (year I)	2.40

Let's now extend the example to a period of 10 years. Let say that for the next 9 years the company will not pay out any dividends. It will retain all profits and it will earn 50% on capital deployed every year. At the end of year 10, it will pay out all the profits of year 10 and thereafter it will pay out profits every year.

This is what the numbers will look like

Rs	Return on capital@50%	Capital
Beginning		1,00,000
1	50,000	1,50,000
2	75,000	2,25,000
3	1,12,500	3,37,500
4	1,68,750	5,06,250
5	2,53,125	7,59,375
6	3,79,688	11,39,063
7	5,69,531	17,08,594
8	8,54,297	25,62,891
9	12,81,445	38,44,336
10	19,22,168	57,66,504

Now how much will you pay to buy the business today? Remember your objective is that you should earn a compounded return of 25% p.a. for the ten-year period.

In year 10, the company will make Rs19,22,168 and it is willing to pay out the amount in entirety as dividend. You should be able to find a buyer for the business at that point at Rs76,88,672 (lets call this the terminal value) as the company is expected to continuously maintain profits at that level (Rs19,22,168) from that point on. And hence the prospective buyer at that point would still get a yield of 25%.

In other words, how much should you offer to pay today if you expect to earn Rs96,10,840 (Rs19,22,168 + Rs76,88,672) ten years hence?

Doing the same high school arithmetic (with the help of a spreadsheet J), you should be willing to pay Rs10,31,956 today. At this price, you are buying the company at Rs103 per share. In

other words you would be willing to buy the company's shares at 10.3x book value and at a PE of 20.6x.

Stock prices reflect earnings and their potential for growth

What this simple exercise in math shows us is that stock prices are a reflection of earnings. And that PEs and P/Bs are influenced by the company's earnings growth. There is a reason why companies have different PEs and that difference is the future earnings (growth) and terminal value. What we have just seen is a simple DCF analysis, the use of which has enabled us to determine what PE or P/B one should pay to buy a business. This is a concept that has its application in judging the true value of a security.

The example that we chose is simplistic. Just in case you missed the point we'll spell it out. There are two other corporate policy decisions that impact this arithmetic-dividend policy and debt equity structure. We'll discuss those points some time else but it's not difficult to see how these two factors could significantly impact the calculations.

Next time you see screaming headlines about PEs, you can smile. You know better.

_____-**The End**_____