

CENTRE FOR FINANCIAL MANAGEMENT

# CFM QUARTERLY IN FINANCE

OCTOBER 2019

EDITOR: DR. PRASANNA CHANDRA

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### ARTICLES /CASES

1. EXPECTED UTILITY THEORY AND PROSPECT THEORY: A COMPARISON\*  
Prasanna Chandra

Think of Praveen and Prakash. Yesterday, Praveen's wealth decreased from Rs. 6 million to Rs 5 million whereas Prakash's wealth increased from Rs 2 million to Rs 2.5 million. Who experiences greater happiness? Who reports higher satisfaction with life?

Daniel Kahneman and fellow Nobel laureate Angus Deaton made a distinction between two concepts of happiness, "experienced happiness" and "life evaluation." **Experienced happiness**, also called "emotional well-being" and "hedonic well-being," is assessed by asking questions about yesterday's experiences of enjoyment, sadness, affection, anger, and so on. **Life evaluation** is assessed by

using Cantril's Self- Anchoring Scale, a scale on which people place themselves on a ladder whose bottom rung represents the "worst possible life" and the top rung represents the "best possible life."

Experienced happiness may be viewed as "fleeting happiness" and life evaluation as "sustained happiness."

Kahneman and Deaton found that experienced happiness rises upto an annual income of approximately \$75,000 and levels off beyond that. Life satisfaction, however, rises steadily with income but at a decreasing rate. People whose annual income is \$200,000 report substantially higher life evaluation than people whose annual income is \$100,000. Experienced happiness represents primarily the utilitarian benefits of consumption of goods and services, whereas life satisfaction represents all benefits of wealth (utilitarian, expressive, and emotional benefits). As Meir Statman said: "Indeed, in the absence of expressive and emotional benefits of wealth it is hard to explain why people whose wealth exceeds what they can reasonably consume in several lifetimes continue to strive for even greater wealth."

Coming back to Praveen and Prakash, the experienced happiness of Prakash is likely to be greater than that of Praveen because Prakash gained Rs. 0.5 million of wealth while Praveen lost Rs. 1 million of wealth. Prakash is more likely to feel cheerful, whereas Praveen is more likely to be sad. The life evaluation of Praveen, however, is likely to be greater than Prakash's because Praveen's wealth of Rs. 5 million is double that of Prakash's Rs. 2.5 million.

### **Levels of Wealth and Gains and Losses of Wealth**

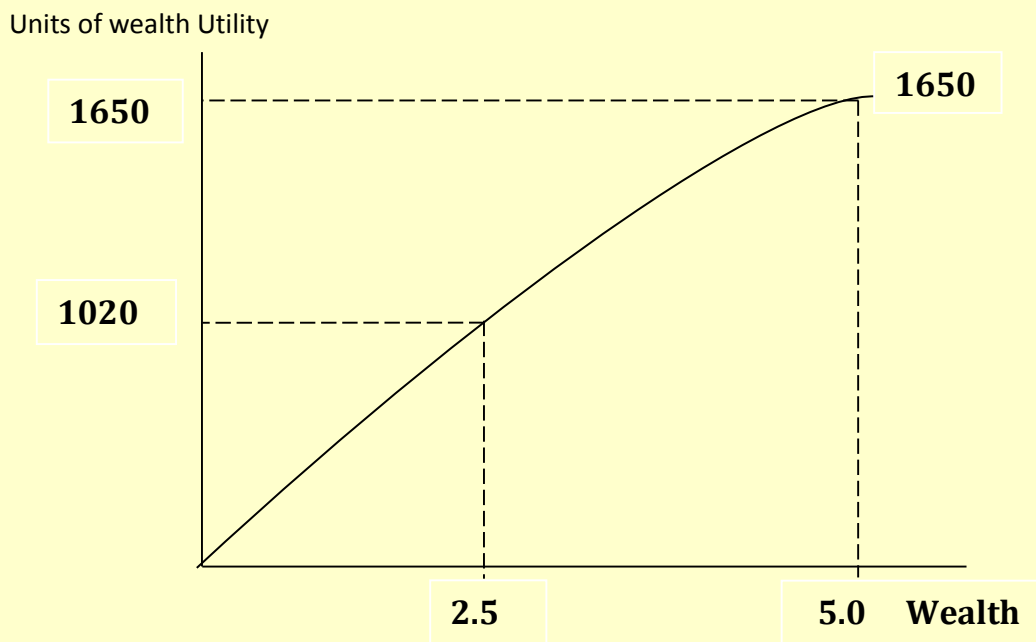
Expected -utility theory and prospect theory are two major theories that measure happiness and predict choices in face of risk. Expected- utility theory was proposed by mathematician Daniel Bernoulli and prospect theory was developed by psychologists Daniel Kahneman and Amos Tversky. Expected utility theory is central to standard finance, whereas prospect theory is a cornerstone of behavioural finance. However, neither of them is comprehensive. A comprehensive theory that measures happiness and predicts choices in face of risk must combine expected utility theory and prospect theory and go beyond them.

In expected- utility theory, utility is *wealth utility*, a shorthand for life evaluation or sustained happiness obtained from wealth. One prediction of expected- utility theory is that sustained happiness or life evaluation from wealth increases with wealth, as depicted in Exhibit 1. This prediction is in line with Merton Miller and

Franco Modigliani's definition of rational investors as ones who prefer more wealth to less.

According to expected utility theory Praveen's life evaluation is higher than Prakash's because Praveen's wealth of Rs. 5 million confers 1,650 units of wealth utility, whereas Prakash's wealth of Rs. 2.5 million confers a mere 1,020 units (It may be noted that the scale of wealth is arbitrary. We can replace 1,650 with 16,500 or any other number. What matters is only the ratios of wealth utility relative to one another.)

### Exhibit 1. *Wealth and Utility*

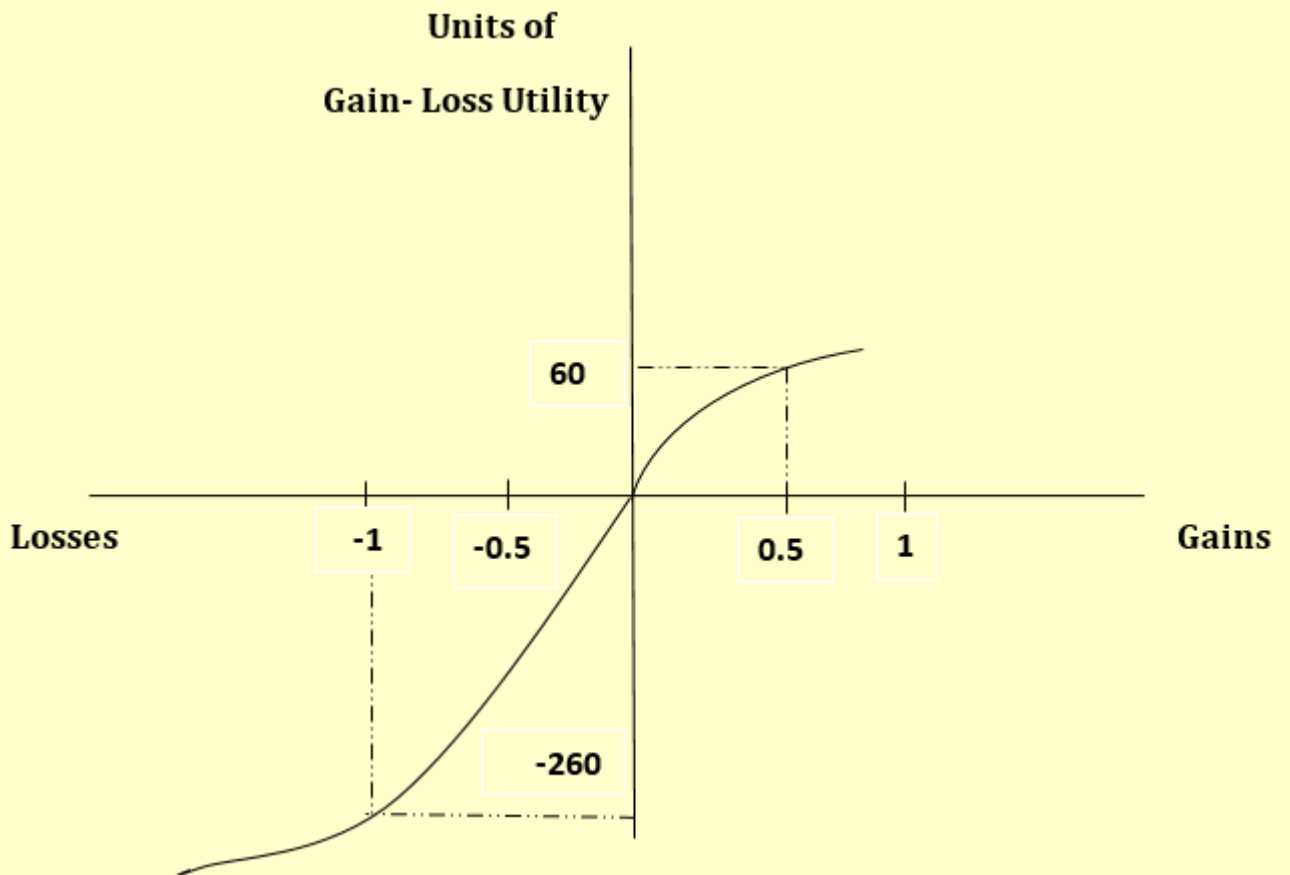


Wealth utility increases more slowly than wealth because of the phenomenon of diminishing marginal utility. For example, the first million rupees adds 1000 units of wealth utility to the zero units of wealth utility associated with Rs.0, the second million adds only 750, units of wealth utility, and the third million adds even less units.

In prospect theory, utility is *gain- loss utility*, which represents experienced happiness or fleeting happiness derived from gains and losses of wealth relative to a reference point. Yesterday's beginning wealth, such as Praveen's Rs. 6 million and Prakash's Rs. 2 million are likely reference levels. According to prospect theory, Praveen suffered a loss of utility whereas Ravi enjoyed a gain of utility. As depicted in Exhibit 1, Praveen suffered a loss of utility of 260 units whereas Prakash enjoyed a gain of utility of 60 units. Like the scale of wealth utility, the scale of gain- loss utility is arbitrary. You can replace 260 with 1300 or any other number. What matters is the ratio of gain- loss utility relative to one another. The

relationship between gains and losses and gain- loss utility, like the relationship between wealth and wealth utility, varies from person to person. A gain of Rs. 0.5 million may add 60 units of gain- loss utility to one person, but 70 units to another person.

**Exhibit 2 Gain- Loss Utility in Prospect Theory**



Expected – utility theory predicts that framing (or description) does not matter, as the second part of Miller and Modigliani’s definition of rational investors implies. In prospect theory, however, framing matters. A frame that comes to mind readily is gain or loss relative to yesterday’s wealth- Praveen lost Rs. 1 million whereas Prakash gained Rs. 0.5 million. A friend of Praveen might buoy his spirits by setting his reference point at Rs. 4 million that he had last year, to highlight the gain from Rs. 4 million to Rs. 5 million and obscure the loss from Rs. 6 million to Rs 5 million. That friend might also shift Praveen’s attention from prospect theory to expected utility theory and highlight the fact that Praveen’s wealth of Rs. 5 million is twice that of Prakash’s Rs. 2.5 million.

Both the expected utility theory and prospect theory predict choices. According to expected- utility theory, people prefer high wealth over low wealth and according to prospect theory people prefer high gains over low gains or losses. While both theories predict risk aversion, risk is defined by the two theories differently, as discussed below.

### **Variance Aversion and Loss Aversion**

According to expected- utility theory, people are always risk- averse and risk is measured by the variance of returns. So, risk- aversion in expected- utility theory can be described as variance aversion and risk seeking as variance seeking.

Prospect theory, too, predicts that people are always risk- averse but risk aversion in prospect theory can be variance aversion, loss aversion, or shortfall aversion. So choices under prospect theory may be similar or dissimilar to choices under expected- utility theory. As Meir Statman put it: “Some prospect theory choices conform to variance aversion, consistent with expected- utility theory, whereas other choices conform to variance seeking, consistent with shortfall aversion in prospect theory, but inconsistent with expected- utility theory.”

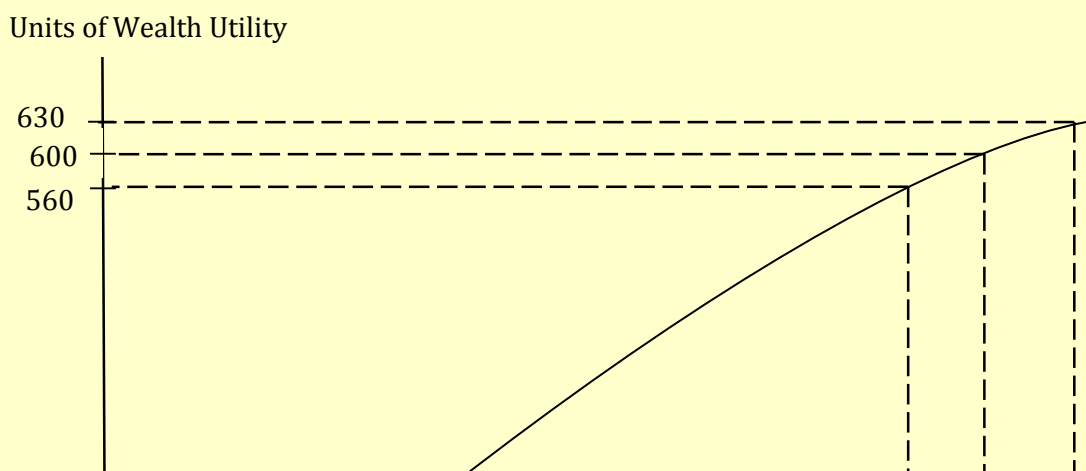
### **Choices When All Outcomes Are in the Domain of Gains**

When all outcomes are in the domain of gains, expected utility theory and prospect theory predict similar behaviour.

People tend to choose a sure Rs. 100,000 over a 50-50 gamble for Rs. 200,000 or Rs. 0. This choice conforms with variance aversion in expected- utility theory: While the Rs. 100,000 expected value of the gamble is the same as the sure Rs. 100,000, the variance of the possible outcomes of the gamble is greater than the zero variance of the sure Rs. 100,000.

Expected- utility theory choices can be described more precisely in the frame of wealth, as shown in Exhibit 3, because the theory assumes that this is how people frame their choices, explicitly or implicitly.

### **Exhibit 3 Choices in Expected Utility Theory When All Outcomes Are in the Domain of Gains**

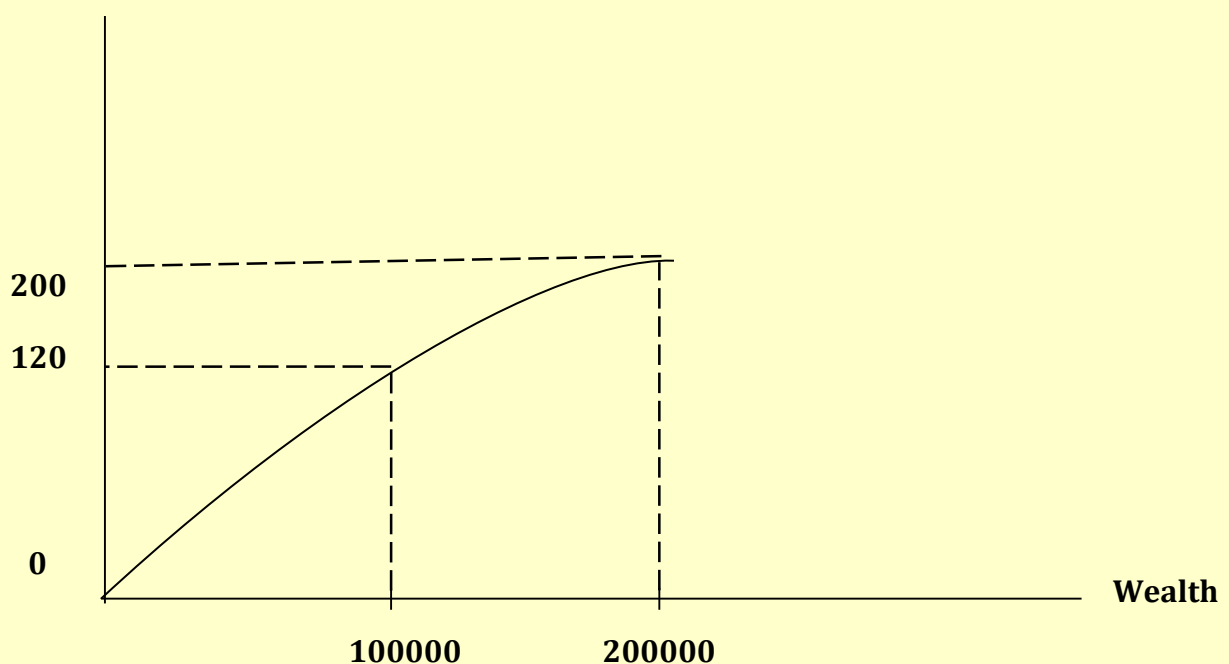


Suppose, the current wealth of a person is Rs. 1000,000, providing 560 units of wealth utility. The sure Rs. 100,000 raises total wealth to Rs. 1,100,000 yielding 600 units of wealth utility. The gamble offers a 50:50 chance of leaving the total wealth at Rs. 1,000,000, yielding 560 units of wealth utility, or raising it to Rs. 1,200,000, yielding 630 units of wealth utility. The average of 560 and 630 units of wealth utility associated with the gamble is 595 units, which is lower than 600 units derived from Rs. 1,100,000 of total wealth. Thus, expected utility predicts that people prefer the sure Rs. 100,000.

For a person whose reference point is Rs. 0, the choice of the sure Rs. 100,000 is consistent with variance aversion in prospect theory as shown in Exhibit 4.

**Exhibit 4 Choices Under Prospect Theory When Outcomes Are All in the Domain of Gains.**

**Units of Gain- Loss Utility**

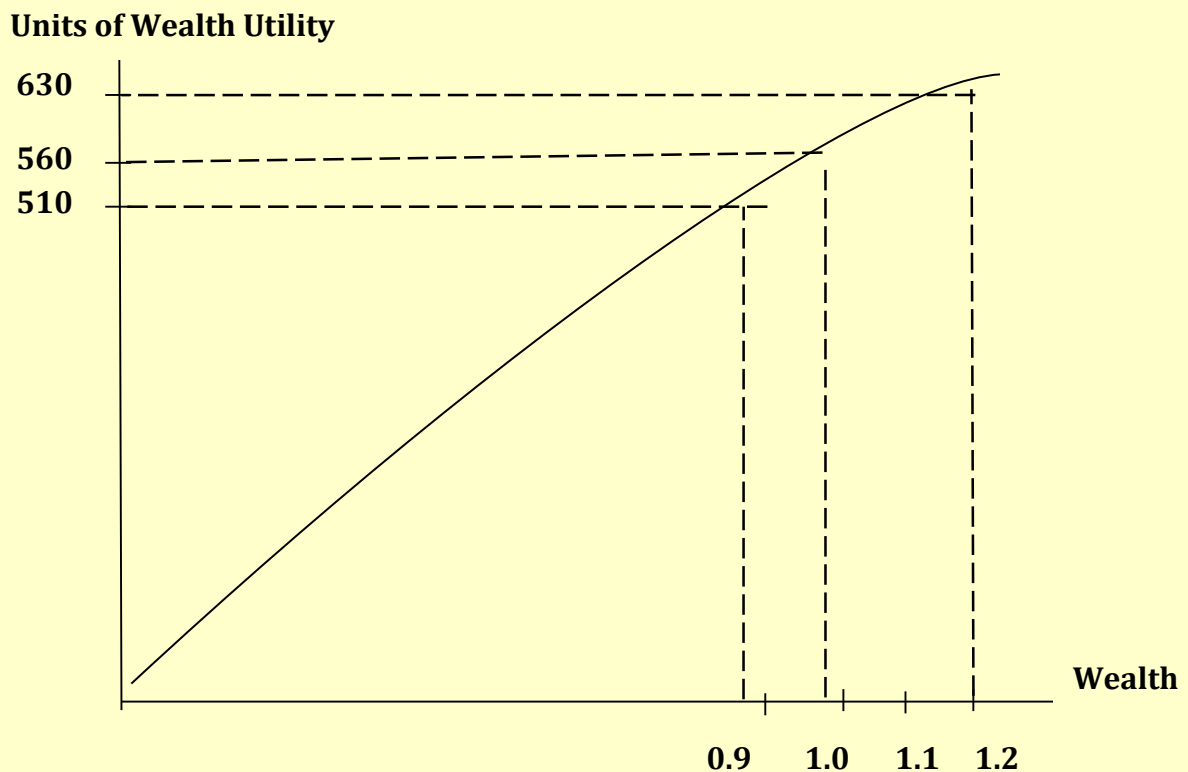


In this case, both the sure amount and the possible outcomes of the gamble lie in the domain of gains. The sure Rs. 100,000 gains provides 120 units of gain- loss utility. As far as the gamble is concerned, a Rs. 200,000 gain yields 200 units and a Rs. 0 gain yields zero units of gain- loss utility, leading to a mean value of 100 units, This is lower than 120 units yielded by the sure Rs. 100,000. Hence, prospect theory predicts that people would choose the sure outcome when all outcomes are in the domain of gains.

### Loss Aversion

Now consider a choice between a sure Rs. 0 and a 50:50 gamble for a Rs. 200,000 gain or a loss of Rs. 100,000 for a person whose current wealth is Rs. 1,000,000. The expected- utility theory can be described in the frame of total wealth, as shown in Exhibit 5

**Exhibit 5 Expected Utility Theory Choices When Some Outcomes Can Diminish Total Wealth**



The current wealth of Rs. 1,000,000 provides 560 units of wealth utility. The sure Rs. 0 maintains the status quo at 560 units. The gamble can increase wealth to Rs. 1,200,000 which yields 630 units of wealth utility or reduce wealth to Rs. 900,000 which yields 510 units of wealth utility. The mean of 630 and 510 is 580

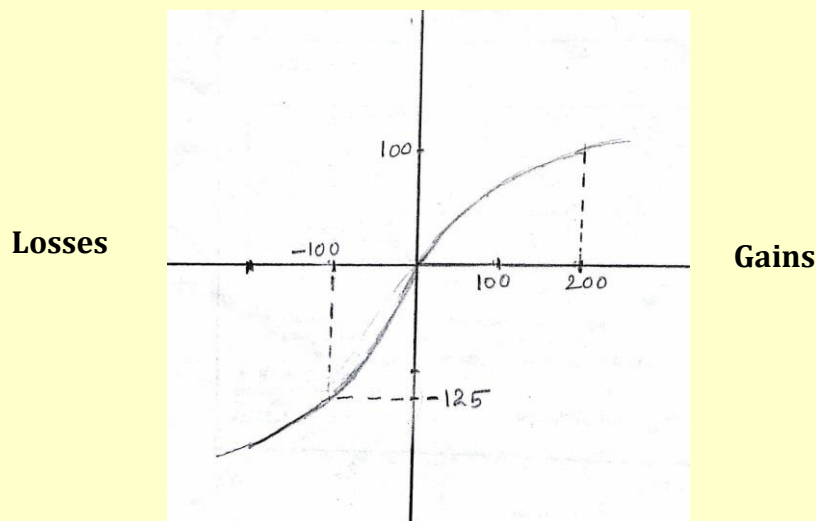
units, a number higher than 560 units of utility associated with the sure amount. This means that the expected utility theory predicts that the person would choose the gamble.

Under prospect theory, however, the gamble might not be appealing. This is because a distinguishing feature of prospect theory is loss aversion which implies that the pain of loss looms much larger than the pleasure of gain of equal magnitude in a range close to the reference point.

As shown in Exhibit 6 a sure Rs. 0 yields zero units of gain- loss utility, a Rs. 200,000 gain ( the upside of the gamble) yields 100 units of gain- loss utility, and a Rs. 100,000 loss ( the downside of the gamble) yields a loss of 125 units of gain- loss utility. The mean of the gamble's units of gain- loss utility is :  $0.5 \times 100 - 0.5 \times 125 = -12.5$ . This number is lower than the zero units yielded by the sure amount. Thus, the prospect theory predicts that the person would reject the gamble in favour of the sure Rs. 0

**Exhibit 6 Choices Under Prospect Theory When Some Outcomes Are in the Domain of Losses**

**Units of Gain- Loss Utility**



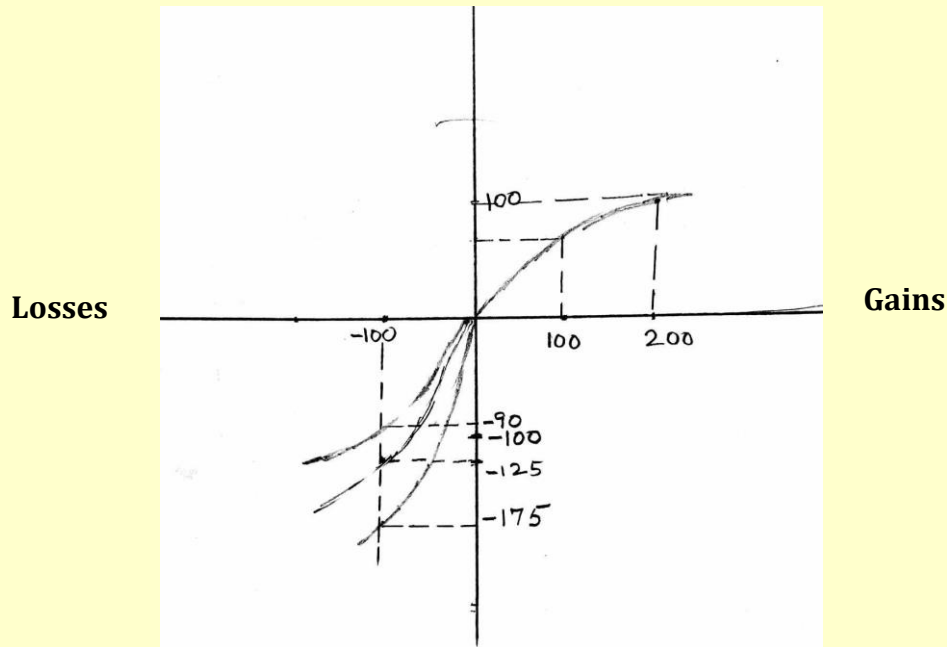
People, of course, vary in loss aversion and such variations affect choice. Exhibit 7 presents the loss aversion of three people, one with low loss aversion, one with medium loss aversion (similar to what was represented in Exhibit 6), and one with high loss aversion. The medium loss- averse person rejects the gamble as its mean gain- loss utility is a negative 6.25. The high- loss- averse person too rejects the gamble as its mean gain- loss utility is a negative (  $0.5 \times 100 - 0.5 \times 175 = -37.5$  ). Only the low- loss- averse person accepts the gamble as its mean gain- loss utility



is units ( $0.5 \times 100 - 0.5 \times 90 = 5.0$ ) which is higher than the zero gain- loss utility associated with the sure Rs. 0.

**Exhibit 7 Choice of People With Varying Loss Aversion**

**Units of Gain- Loss Utility**



Loss aversion varies considerably by gender and age. On average, men are less loss averse than women, and the young are less loss averse than the old. Loss aversion seems to vary across countries. On average, people in China are less loss-averse than people in the U.S. and people in the U.S. are less loss - averse than people in the U.K.

**Shortfall Aversion**

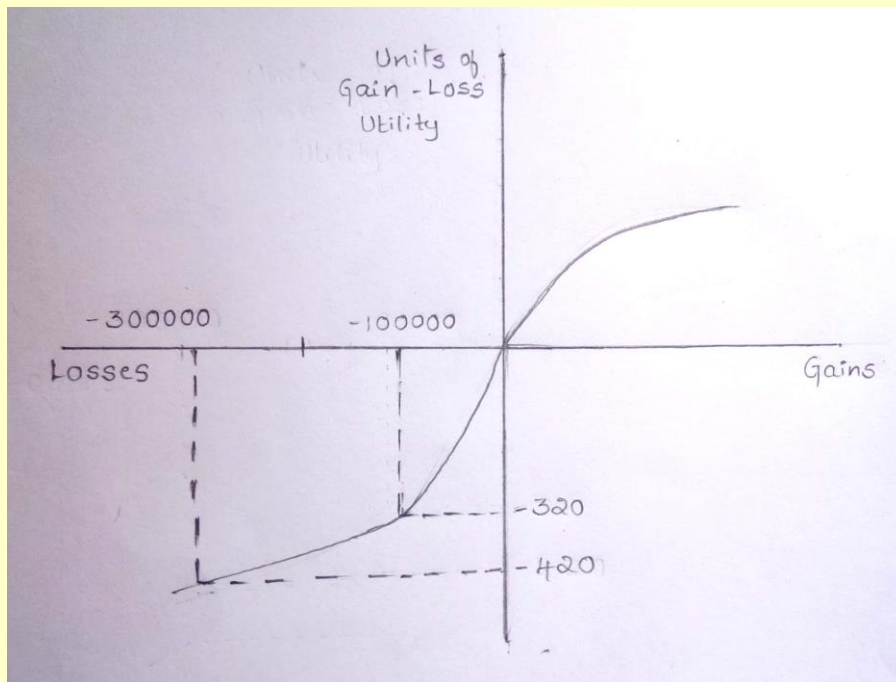
Shortfall aversion is different from loss aversion, although the two are often confused. In loss aversion, the reference point is the current position. In shortfall aversion, the reference point is the aspiration level, which is almost invariably higher than the current position.

People gambling in a casino are likely to make a bold bet that offers a chance, albeit small, to eliminate the shortfall from their aspiration than make timid bets that offer a negligible chance to eliminate the shortfall. To reduce risk in the form of shortfall from their aspiration, they accept risk in the form of variance and potential loss.

Consider a choice between a sure Rs. 100,000 loss and 50-50 gamble for a Rs. 300,000 loss or a Rs. 0 loss, as shown in Exhibit 8. The sure Rs. 100,000 loss means

a sure shortfall from aspired wealth, which in this case is assumed to be the wealth before the loss, with no chance to eliminate the shortfall. A Rs. 100,000 loss reduces gain-loss utility by 300 units. The gamble, however, offers a 0.5 probability to eliminate the shortfall if its outcome is a Rs. 0 loss, even though it also has a 0.5 probability of inflicting a Rs. 300,000 loss which reduces the gain-loss utility by 420. The gain loss utility of Rs. 0 loss is zero units.

### **Exhibit 8 Shortfall Aversion in Prospect Theory**



### **Aspiration and Shortfall Aversion**

People buy lottery tickets, start new ventures, and move to more promising places to reach their aspirations. People do not take risk for the sake of taking risk. Rather, risk is viewed as a cost for the prospect of achieving their aspirations. Variance is accepted as the price for avoiding shortfall. For example, people who bought homes in the U.S. in 2006 and 2007 were perhaps driven by their aspirations for the utilitarian, expressive, and emotional benefits of middle-class lives, derived from owning home. They accepted risk in the form of variance to avoid the risk of falling short of their aspirations.

Even upper social class members aspire for the utilitarian, expressive, and emotional benefits of even higher social classes. Rajat Gupta, the managing director of McKinsey & Company from 1994 to 2003, who later served as a member of Goldman Sachs board of directors is a conspicuous example of such behaviour. By disclosing inside information to Rajaratnam of the Galleon hedge fund for which he was sentenced to prison, he risked his millions and reputation

for a chance to reach the billionaire class. In a telephonic conversation that was played at his trial, Rajaratnam said: “My analysis of the situation is he’s enamoured with [Kohlberg, Kravis and Roberts private equity firm] and I think he wants to be in that circle... That’s a billionaire circle, right? Goldman is like the hundreds of-million circle, right?”

Gupta’s aspirations are evident in the following words he spoke to university students before his fall: “When I look at myself, yeah, I am driven by money. And when I live in this society, you know, you do get fairly materialistic, so I look at that. I am disappointed. I am probably more materialistic today than I was before, and I think money is very seductive.. However much you say that you will not fall into the trap of it, you do fall into the trap of it.”

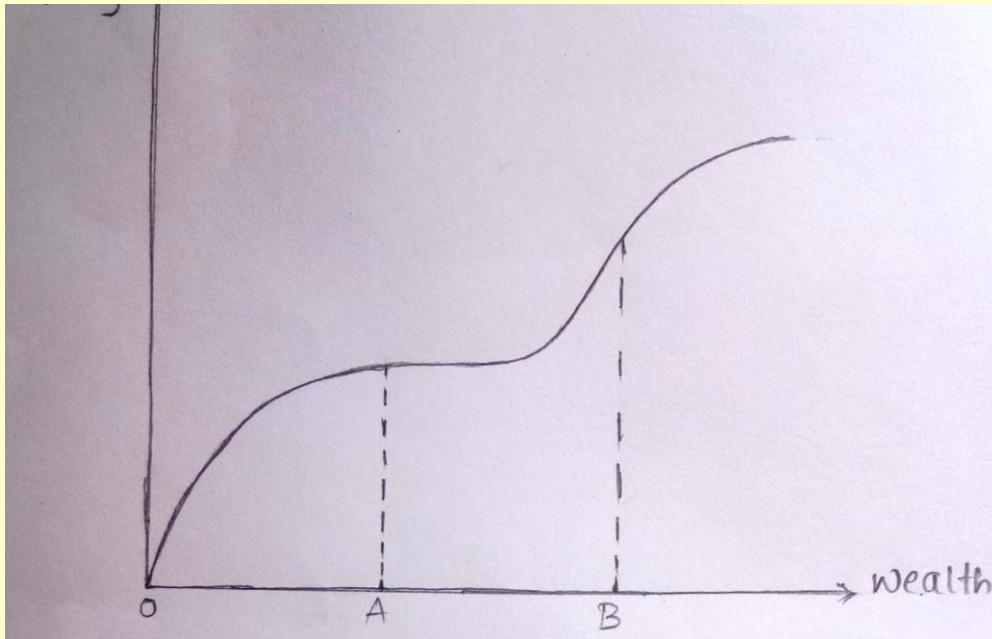
As Meir Statman remarked: “Gupta aspired for the utilitarian, expressive, and emotional benefits of money that buys big houses and vacation homes. He aspired even more for the social status of a philanthropist, willing to exchange the utilitarian benefits of money for the expressive and emotional benefits of high social status.”

Commenting on the role of aspirations in risk taking Milton Friedman and Leonard savage observed decades ago: “Men will take great risks to distinguish themselves even when they know what the risks are.” They quoted the venerable Adam Smith about “The presumptuous hope of success” that lures “so many adventures into ... hazardous trades.”

Friedman and Savage proposed the utility function shown in Exhibit 9. In this exhibit people derive utility from levels of wealth and are variance averse as in expected utility theory barring for a particular region (AB) of wealth where due to shortfall aversion they are variance seeking because they want to “distinguish themselves” by reaching their aspirations. While the Friedman – Savage perspective addressed some flaws in the original expected utility theory, Harry Markowitz criticised the Friedman- Savage utility function because the final concavity in their function assumes that individuals in the higher wealth bracket would never gamble. Building on the insights of Friedman and Savage and Markowitz, Daniel Kahneman and Amos Tversky proposed prospect theory wherein utility is measured by gains and losses of wealth relative to reference wealth, which might be current wealth or aspired wealth.

### ***Exhibit 9 Friedman – Savage Utility Function***

#### **Units of Wealth Utility**



### Probability Weights, Aspirations, and Emotional Costs and Benefits

Expected utility theory predicts that people use objective probabilities of possible outcome when they consider choices, whereas prospect theory predicts that people use subjective probabilities that can diverge from objective probabilities. The ratios of subjective probabilities to objective probabilities are called **probability weights**. When subjective probabilities equal objective probabilities, probability weights equal 1. This happens, when people are free of making errors and consider only utilitarian costs and benefits. Probability weights differ from 1, when people commit errors. Even when people are free of making errors, probability weights depart from 1 when aspirations and expressive and emotional costs and benefits (such as those of hope and fear) are involved.

### The Four - Fold Pattern of Preference

Daniel Kahneman described a “fourfold pattern” in which probability weights depart from 1.

- Lottery
- Insurance
- Acceptance of unfavourable settlement
- Rejection of unfavourable settlement

**Lottery** Consider of a Rs. 100 lottery ticket that offers an objective 0.001 percent probability to win a prize of Rs. 5 million. The expected payoff of the ticket is Rs. 50, the product of the 0.001 percent objective probability and the Rs. 5, 00,000 prize. The huge difference between the potential payoffs of Rs. 0 and Rs. 5, 00,000

means that the variance of the payoffs of the ticket is high. Expected- utility theory predicts that people would be unwilling to buy the ticket because its Rs 50 expected payoff is one- half its Rs. 100 price and the variance of wealth resulting from winning or losing is significantly higher than the variance of keeping the current wealth by not buying the lottery.

If the subjective probability is identical to objective probability, prospect theory's loss aversion predicts even more strongly that people would be disinclined to buy the lottery ticket only on the basis of utilitarian costs and benefits. Loss aversion implies that the loss of Rs. 100 if the ticket does not win hurts more than the gain of winning a prize of Rs. 5,000,000 with just 0.001 of 1 percent probability.

People however buy lottery tickets because they overweight the probability of winning. This may be because they consider aspiration and emotional costs and benefits in addition to utilitarian costs and benefits. As Statman put it: "A lottery ticket carries the emotional benefits of the *hope* of winning, thereby reaching high aspirations. Aspirations and hope of reaching them are reflected in probability weights that overweight the objective probabilities of winning."

**Insurance** Consider a Rs. 100,000 fire insurance policy for a Rs. 50,000,000 home when the objective probability of the house being burnt down is 0.1 percent. Buying an insurance policy makes no sense if only utilitarian costs and benefits are considered: a sure loss of Rs 100,000 definitely looms larger than the Rs. 50,000 expected loss ( $0.001 \times 5,000,000 = 50,000$ ). People however, regularly buy fire insurance policy because they overweight the objective probability of fire loss. They may assign a probability weight of 1 percent as they consider their aspiration to avoid shortfall from their current position.

**Acceptance of a Settlement** Consider a situation where a person has a choice between two options:

- Option A: Accept Rs. 1,400,000 as payment before trial for settling a claim
- Option B: Proceed to trial with a 95 percent objective probability of a favourable judgement awarding Rs. 2,000,000 and 5 percent objective probability of an unfavourable judgment awarding nothing.

Considering only utilitarian costs and benefits might persuade him to choose option B as its Rs. 1,900,000 expected payment ( $0.95 \times \text{Rs. } 2,000,000$ ) is significantly higher than the Rs. 1,400,000 settlement offer. Yet shortfall aversion from the sure Rs. 1,400,000 and the anticipated emotional cost of regret if the judgement is unfavourable might magnify the 5 percent objective probability of an

unfavourable judgement to something like a subjective probability of 40 percent, implying a probability weight of 8.

**Rejection of a Settlement** Consider a situation where a person has a choice between two options:

- Option C: Pay Rs. 1,400,000 before trial for settling a claim
- Option D: Proceed to trial with a 95 percent objective probability of getting an unfavourable judgment involving a payment of Rs. 2,000,000 and a 5 percent objective probability of getting favourable judgment involving a zero payment.

Considering only utilitarian costs and benefits might persuade him to choose option C and avoid trial, as the settlement amount of Rs. 1,400,000 is significantly lower than the expected Rs. 1,900,000 payment. Yet shortfall aversion and the emotional benefits of hope that a large loss can be avoided if the trial concludes with a favourable judgment might magnify the 5 percent objective probability of a favourable judgment to something like a subjective probability of 40 percent, implying a probability weight of 8.

**Exhibit 10. The Four - Fold Pattern of Preference**

	<i>Gains</i>	<i>Losses</i>
HIGH PROBABILITY Certainty Effect	95% chance to win ₹ 2,000,000 Fear of disappointment RISK AVERSE Accept unfavourable settlement	95% chance to lose ₹ 2,000,000 RISK SEEKING Reject favourable settlement
LOW PROBABILITY Possibility Effect	.001% chance to win ₹ 1,000,000 Hope of Large gain RISK SEEKING Reject favourable settlement LOTTERY TICKET	.1% chance to lose ₹ 50,000,000 Fear of large loss RISK AVERSE Accept unfavourable settlement INSURANCE

## A Summary Comparison of Expected Utility Theory and Prospect Theory

A summary comparison of expected utility theory and prospect theory is given below:

<b>Expected Utility Theory</b>	<b>Prospect Theory</b>
1. Utility is wealth utility and is determined by total wealth.	1. Utility is gain- loss utility and is determined by gains and losses relative to a reference point.
2. Choices are based on outcomes on total wealth.	2. Choices are based on the effects of outcomes on gains and losses.
3. Framing does not affect the perceptions of total wealth.	3. Framing affects the perceptions of gains and losses.
4. People are always risk-averse. Risk aversion means variance aversion.	4. People are always risk- averse. Risk aversion may mean variance aversion, loss aversion, or shortfall aversion.
5. People never seek variance.	5. People may sometimes seek variance, when variance seeking reflects shortfall aversion.
6. People use objective probabilities of outcomes.	6. People use subjective probabilities of outcomes, using “probability weights” in place of objective probabilities.
7. Emotions play no role in choices.	7. Emotions such as hope fear, pride regret, and anger play a role in choices.

\*Adapted from Meir Statman *Finance for Normal People: How Investors and Markets Behave*.

## B. SNIPPETS

### 1. Performance- based Pay Can Be Dysfunctional

In an article published on *Harvard Business Review's* website on February 23, 2017, Dan Cable and Freek Vermeulen of London Business School argued that top executives should be paid a fixed pay and not a performance-based pay.

They cite five problems with performance-based pay:

1. "Contingent pay only works for routine tasks."  
While monetary incentives work for a routine job like typing they are less effective for managerial jobs that involve learning and creativity.
2. "Fixating on performance can weaken it."  
Executives perform poorly when they focus on certain targets. They do better when they are given latitude to work on "developing a particular competence; acquiring a new set of skills; mastering a new situation."
3. "Extrinsic motivation crowds out intrinsic motivation."  
Really good CEOs are driven by intrinsic motivation – they love their work. Paying for performance can actually diminish their love for work.
4. "Contingent pay too often results in fraud."  
When pay is linked to achievement of some goals, people figure out a way of gaming the system, even if that calls for cooking the books.
5. "Measuring performance is notoriously fraught."  
Performance measures are almost invariably flawed. As Gable and Vermeulen put it: "Whatever measure you use, you are going to end up with an imperfect quantification of what you really would like your top executives to do."

Their paper does not focus on the level of CEO pay but only on its composition. How high the executive pay should be is a different matter.

## **5. Two Notions of Efficiency**

There are two notions of efficiency in financial economics: Pareto efficiency and informational efficiency.

Resource allocation is said to be Pareto efficient when no other feasible allocation of resources and technology can improve one person's situation without causing harm to some other (s). Pareto efficiency ensures that resources are allocated optimally and the riskiness of investments is consistent with the attitude of investors toward risk. It may be noted that Pareto efficiency and errors and biases can go hand in hand. In a Pareto-efficient world, investors might well take on more risk than is objectively appropriate or overreact to information causing excessive volatility in security prices.

Informational efficiency means that market prices reflect intrinsic values and hence provide proper guidance to entrepreneurs, investors, and managers. By relying on



market prices, managers can avoid negative NPV projects and investors can select efficient portfolios.

## 6. The Law of Unintended Consequences

Popularised by the 20<sup>th</sup> century American sociologist Robert K. Merton, the concept of unintended consequences implies that an intervention in a complex system tends to create unanticipated and often adverse outcomes. It is commonly used as a warning against the hubristic belief that humans can control the world around them.

Financial theories and models of risk management had adverse consequences. As Satyajit Das put it: “Quantification of risk is difficult. The illusion that risk can be measured or managed had unintended consequences, encouraging risk taking or lulling regulators and policy makers into assuming that something is less risky than it is.”

The inability of governments and central banks to address deep- rooted problems in the current economic order is another manifestation of the law of unintended consequences. Andrew Gelman, professor of statistics and political science at Columbia University, wrote in 2008:

“The law of unintended consequences is what happens when a simple system tries to regulate a complex system. The political system is simple. It operates with limited information (rational ignorance), short term horizons, low feedback, and poor and misaligned incentives. Society in contrast is a complex, evolving, high-feedback, incentive- driven system. When a simple system tries to regulate a complex system, you often get unintended consequences.”

## 7. Seven Classes of Fairness

According to Hersh Shefrin and Meir Statman, fairness in financial markets may be understood as entitlements to particular classes of transactions. They have identified seven classes of fairness by the following entitlements.

**Voluntary Participation:** A transaction is fair if the parties enter into it voluntarily.

**Freedom from Misrepresentation:** People can trust that voluntarily disclosed information is accurate.

**Equal Information:** People have equal access to information.

**Equal Processing Power:** People not only have equal access to information, but also to a “competency floor” in information processing skills.

**Freedom from Impulse :** People are protected from possible imperfect self-control.

**Efficient Prices:** Prices are efficient and people perceive them to be so.

**Equal Bargaining Power:** People have equal bargaining power in negotiations leading to transactions.

## **PART C: WIT AND WISDOM**

### **1. HUMOUR**

- A New Yorker drove his car into a ditch in a rural area. Fortunately, a local farmer came to help him with his massive strong horse named Buddy. He tethered the car to Buddy and shouted, “Pull Dude, pull!” Buddy didn’t budge. The farmer then yelled, “Pull Duster, pull!.” Buddy didn’t move. The farmer hollered, “Pull, Charlie, pull!” Nothing happened. Finally, the farmer said calmly, “Pull, Buddy, pull.” The horse swiftly pulled the car out of the ditch.

The New Yorker was very grateful but equally curious. He asked the farmer, “Why did you call the horse by the wrong name three times.” The farmer replied, “Well, Buddy is blind and if he felt that he was the only one pulling he would not even try.”

- A young businessman and his accountant board a train on its way to London. They sit right across the aisle from a young woman and her grandmother. The young businessman and the young woman exchange friendly smiles and evinced interest in each other. The train passes through a pitch dark tunnel. There is a sound of a kiss as well as a slap. When the train emerged from the tunnel, the four of them tried to figure out silently what happened in the dark. The grandmother thought that the young businessman kissed her daughter who fittingly replied by slapping him. The young woman was pleased to be kissed but felt sorry that her grandmother slapped the young businessman. The accountant knew that his boss (the young businessman) kissed the young woman and she wanted to slap his boss but instead hit him. The young businessman was very pleased that he could kiss the young woman and also slap his accountant.

### **2. WISE SAWS**

- He who is plenteously provided from within, needs very little from outside.
- When our hearts are empty we collect things