

# **PRINCIPLES OF BEHAVIORAL ECONOMICS**

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**Week 40**

**Lecture 40**

Hello everyone, this is the last module on mental accounting, Module 40, where we discuss policy implications. In the previous module, we also discussed policy implications of mental accounting, where we covered individual agents and marketers. This is, of course, under the course of Principles of Behavioral Economics. In this module, we will discuss three things: labor markets, financial markets, and government policies. So, we begin with labor markets.

An important aspect of behavior in labor markets that involves mental accounting is money illusion. In labor markets, this translates into loss aversion with respect to nominal wage losses, but not real wage losses. So what it implies is that, for example, Kahneman, Knetsch, and Thaler found that 62% of respondents judge unfair a wage cut of 7% when there is no inflation, but only 22% of respondents judge unfair a 5% increase when there is 12% inflation, even though both situations represent a 7% cut in real wages. As you can see, in the first instance, there was a 7% wage cut and no inflation.

Now, in the second case, there is 12% inflation. So something that earlier cost 100 rupees now costs 112 rupees. Now, in that context, there has been a 5% wage increase, meaning that if you were getting 100 rupees earlier, now you get 105 rupees. But since prices are at 112, you are essentially experiencing a 7% real wage cut. In order to maintain the same real wage, there should have been an increase in wages by 12%.

Now here, there has been a decline in wages by 7 percent. Of course, in terms of calculations, it becomes slightly difficult, but then it is like if you were earning 112 previously, then a 7 percent discount or 7 percent decline in wages would not exactly bring you to 105, but then slightly more than 105 because 112 is greater than 100. Nevertheless, the implications are basically the same.

You are 7% lower or worse off because of inflation here and because of a wage cut here. But people preferred or did not like the wage cut, while the majority of them were quite okay with an increase in wages, even though there have been equal financial implications. So what it tries to say is that we are suffering from money illusion. We are more concerned about the nominal value of the wages—whether it is 100, 105, 112, or 107—than the real implications it has. It is actually not much observed, or people are not much bothered about it.

Employees tend to respond to this bias by resisting nominal wage cuts, except in times of severe recession when prices may be falling. They may prefer instead to lay off workers. The optimal solution for both employers and workers actually varies from country to country, according to labor laws and customs. In Europe, it is more common to reduce wages by reducing the length of the working week rather than firing workers, which tends to result in industrial action and high compensation payments. So what they do is that instead of firing individuals,

they would simply reduce the working hours. So basically if your working hours or if your pays are connected to the hours you work, then of course your total pay decreases. So that is much more acceptable. That is sort of community insurance. The community actually thinks of each other and they really do not want to create too many job losses from personal perspective as well as it's a part of social preferences.

Instead of completely firing a large number of individuals and having some individuals, at their regular wages, you generally go for cut in the wages in terms of smaller working hours for entire workforce or a large part of your workforce. This essentially amounts to an egalitarian work sharing solution. Another aspect of the labor market where mental accounting is relevant concerns the nature of the labor supply curve. The theory of labor supply curve in the standard model predicts that supply curve will be a standard upward sloping one where workers will work longer hours at higher wages.

The theory is based on the concept of intertemporal substitution, meaning that when wages are high, workers will substitute work for leisure as the opportunity cost of leisure is higher at the higher wage. This simply implies that suppose initially my wage was 10 rupees per hour. Now, if it has increased to say 20 rupees per hour, then if I take more leisure, then actually I am losing out of larger amount of money. So, my opportunity cost of leisure is increasing as a result of which I will think of or consider working for longer hours.

If people have diminishing marginal utility of leisure time, then they will be inclined to give up more leisure as the wage increases. According to many behavioral theories, however, workers may have reference dependence for total earnings, leading them to be target workers who aim to achieve a particular level of total earnings each time period, for example, per week. In this case, a higher wage rate would lead to a lower level of hours worked and a downward sloping supply curve. So as you can see that what it says is that if we have seen we are calling them target workers in the sense they have a target level of income.

For example, every week I want to make only 5000 rupees. So if my wages are say 50 rupees per hour, then I will be working for 100 hours. If my wages are say 500 rupees per hour, I will be working for 10 hours a week. So I set my target, I only work up to that much.

And if that is so, as the wage rate increases, I must be working for lesser and lesser number of hours. So the supply curve would be downward sloping. That is what is claimed by the behavioral theorists. Now we discussed previously a study on New York City drivers and it showed that reference dependence was important and the taxi drivers were actually target workers supporting a behavioral model against a standard model.

However, this study has been criticized on a number of grounds. For example, the study claimed that shifts in the supply curve would lead to observations showing an inverse relationship between hourly wage rates and hours worked. But econometricians argued that these would actually be points on the demand curve and not the supply curve. So they call it a problem of identification problem. Another problem with that study was that in the study, the wage rate was calculated by dividing total earnings by the number of hours worked.

Any upward error in hours worked could cause a downward error in the calculation of wage rate, thus exerting a negative bias on the estimated relationship. A recent study that addressed these econometric problems, however, did not find conclusive results in some areas. The same study also considered a temporary increase in wages by 25% for bike messengers who, like cab drivers, were able to choose how long to work within a shift. And the study reported two main findings.

First, they work 30% more shifts and second, within each shift, they do 6% fewer deliveries. So, now you can see that the problem here is that it can be claimed that both of these results are compatible with both the neoclassical model and the behavioral target worker hypothesis. Here, NM can explain the longer working hours because as wages

increases by 25%, they decide to work 30% more shifts. While behavioral target worker hypothesis may explain the fewer deliveries within each slot.

However, it is said that the standard model or the neoclassical model also explain the fewer deliveries because overworking may reduce the marginal utilities and because of fatigue, they can go for fewer deliveries. Okay, so next we talk about financial market. There are many examples of situations where mental accounting principles are relevant in understanding the behavior of financial markets like diversification heuristic or frequency of evaluation in the context of myopic loss aversion.

So these things we have already discussed previously. However, it is believed that the market will eliminate behavioral deviations from the standard model in financial markets more than in any other area. And that's because of three reasons. First, aggregation. Individual deviations will tend to cancel each other out in the market as a whole.

Second, experience and expertise. The most important agents in financial markets tend to be skilled experts who do not suffer from the same biases as normal people. So we can expect them to be more rational. More rational decision-making will take place, and as a result, we may not deviate much from what is suggested by the neoclassical model. And third, competition: agents who are biased will be driven out of the market since they will make bad decisions and be unable to compete.

So, in this context, it seems fair to conclude that the evidence is generally mixed. Whether we actually have fewer instances of irrational behavior in financial markets or not, the literature remains inconclusive about it. Some studies indicate that in markets dominated by experts, biases tend to disappear or at least be less pronounced, which is actually the claim. However, one study showed that the opposite is true: experts showed even more biases than non-experts.

It reported that although there are differences between the behavior of professionals like from the Chicago Board of Trade and students, the behavior of the traders actually displayed a greater tendency to myopic loss aversion than that of the students. So you can see that it claims they have a larger bias. The experts tend to have greater bias compared to non-experts. Conflicting theories and evidence point out the need for further research into the equity premium puzzle.

Benartzi and Thaler have in fact revised their theory regarding the relationship between the EPP, that is the equity premium puzzle, and myopic loss aversion since their 1995 paper.

One main weakness of the original model was that it was not an intertemporal model involving consumption choice, which is the essence of the puzzle in broader terms. People make investment decisions over the long term, ultimately to maximize their overall consumption. The discussion on financial markets was specifically short, primarily because, as mentioned,

that deviations are relatively less. So next we talk about the third thing, which is government policy, or this can be basically the fifth thing. Under policy implications, we have been discussing individual agents and markets. Then we discussed labor markets. Financial markets and finally government policies.

There are also other significant implications of mental accounting processes for public policy. Some of these relate to activities where the government is directly involved in terms of provisions such as state pensions and medical care and others relate to areas where the government wants to influence the market, for example, with environmental or social policies. In many cases the government wants to nudge people into making decisions that are better for them in terms of being judged better by decision makers themselves.

All decisions take place within a frame. For example, deciding whether some allowance to be paid once a month or twice a month. Furthermore, there is no such thing as a neutral frame and any attempt to provide one may be misguided. Many of the policies involve aspects relating to intertemporal decisions and social interactions. We briefly discuss government policies under two heads.

They are public services and government influences. So first talking about public services, in many countries services such as healthcare and pensions have mixed provision with both the public and the private sector having a role. The state is often regarded as providing a safety net so that the less privileged sectors of the population receive at least some minimum standard of provision, which is the case in India also. There is free healthcare facilities, there is free or maybe very low premium life and health insurance provided by the governments to certain marginalized sections of the society while for the affluent one or those who can afford they

always can go for private insurance or insurance or facilities provided by the private sector. In this regard it is suggested that the provisions or policies should have good choice architecture as offering too many choices may make things cumbersome and confusing. In the context of menu effects, we noted that too much choice can be a problem, causing

people to make worse rather than better decisions. Confusion can cause people to defer making a decision, sticking with the status quo.

People tend to anchor on an existing situation and accept it, even if it is significantly suboptimal. Thus, people may end up continuing with a particular drug problem, even when a better or cheaper drug is available. Or it's not only about drug problems; it's about any provisions, possibilities, or programs. One may continue with that if the alternatives are very cumbersome to understand. Instead of putting your mind there, you would prefer to continue with what you are already doing.

So basically, inertia—the problem of status quo bias. Another important issue in public policy relates to contributions to pension funds or retirement savings plans and provisions for the elderly. These were also discussed in the context of financial markets. Governments can encourage savings in this form by providing relevant tax incentives. So if there are more tax incentives on investments made in pension funds, that will encourage people to put more money into pension funds.

This is an area where public and private sector provisions complement each other. If more people are covered adequately by private provisions, this reduces the burden on an increasingly strained public sector. This increasing strain arises because of the aging population in all developed countries. So that's a different problem altogether. As there is a change in the demographic profile, the number of young people is decreasing and the number of aged people is increasing.

So basically, if all the support is supposed to come from the government, then it would be extremely financially strenuous for the government. At the same time, since fewer people would be working, because the percentage of younger people, the working age population is now smaller. So government will be able to generate less taxes. So of course the result will be, there is less income but more expenditures.

That further adds to the burden on the government. Government policy can influence market behavior in a number of ways. First of all it can mandate or encourage changes in the framing of choices. Retirement saving is a good example. There is a strong evidence that enrollment can be increased simply by changing the default option to enrolling rather than not enrolling.

However, it is observed that even if people enroll, they keep contributions at a low level. One solution could be to integrate savings plan with spending accounts like saving included

in credit card payments, which is almost like when you pay the credit card bill then it automatically includes an additional amount in the credit card bill itself which is credited to your savings account so as a result of which here you can see that you are integrating the losses, the two payments are clubbed together. Subsequent losses are integrated and that's how there is basically it feels or it pinches the less.

So this is how one can always encourage individuals or rather push individuals toward greater savings. Now, here in this context, I can also give you a few examples. For instance, in this institute, if there is a group health insurance policy, if the institute has opted for a group health insurance policy, then it is always convenient to make it the default option for all the individuals. And then you can always

inform individuals that this has been the default option. If you want to opt out, you can always do so. Similarly, we have this new tax regime and the old tax regime. So which one would you prefer? For most people—or for all the employees—the institute is going for the new tax regime as the default option.

And then a mail is sent out to all the employees that if you want to opt out of the default option—that is, the new tax regime—then you let us know. So most often, because of status quo bias, people would not really bother to check which one is more beneficial and consider opting out. And if they want to, then of course they will. That also reduces the workload on different administrative departments.

This takes advantage of the principle of integrating losses due to diminishing marginal sensitivity. There is also evidence that if higher contributions are presented as a default option in employment contracts, people are more likely to accept them. So this is again basically the default option. Similarly, when lower contributions are the default, people don't opt out actively for higher contributions due to status quo bias.

Thus, the choice of default is vital in the framing of choices. Default options are often regarded as normal or endorsed by the default setter, thus causing the bias. So as I was trying to tell you that when institute sends out an email, saying that you are by default opted for the new tax regime, the provisions under both tax regimes are already mentioned, Then, to many, it gives an impression that since we are enrolled in the new tax regime, maybe the institute thinks that it is better for us. It is endorsing the new tax regime.

So we should better go for it. So there is this sense of something being endorsed when it is the default option. Status quo bias can be a problem in other aspects of policy where the

government wants to change behavior. For example, the current policy in most countries regarding organ donation is that people have to carry a donor card if they wish to donate. In other words, they have to opt in.

In view of the shortage of organs like kidneys and the number of deaths related to this, some doctors and others have proposed that this default should be changed so that people have to opt out. So the default is that you donate your organs. If you do not want to, then you have to opt out. Evidence suggests that this change would result in a substantial increase in organ donation. Another area where framing is of great importance is tax and transfer policies.

In this case, it is government itself that is responsible for framing the nature of its policies. People are more likely to spend income that is unexpected and perceived as unearned. So something which is like a bonus, a windfall, is more likely to be spent. Second, reversal of losses were seen as being more valuable than gains. The psychology involved is similar to the house money effect and returning to the status quo bias.

So basically, you basically lost some money. When you get it back, what it says is that that gives you greater pleasure as compared to an equivalent amount of gain. So a loss is when recovered, it's like you close the account. So here two impacts are there. One is house money effect.

And the second one is, of course, return to the status quo. I have closed the account. I went back to where I was initially. Consequently, environmental policy, counter-terrorism policy and anti-obesity policy may all be more effective if they are framed as returns to a previous more desirable state than as gains compared with the current undesirable state.

Third, people receiving the smaller rebates recalled spending a higher portion or proportion of it than those receiving the larger rebates may be because smaller amounts are less likely to be earmarked for a particular budget category of spending or saving. Alternatively, the smaller amounts are actually clubbed with the petty cash or miscellaneous expenses. So that is not booked anywhere as a result of which you tend to spend it. Spend larger proportion of it as compared to when you receive a larger lump sum amount that goes more into assets.

This aspect also we have previously talked about. Thus government may stimulate more spending in the economy by spreading out rebate payments and making smaller payments while keeping the total rebate bill the same. So if you are going to receive a rebate of say

10,000 rupees what it suggests is that divide it into smaller components. So you make it 1,000 rupees at a time. You receive 10 such rebates but then

they are not clubbed together since then they are broken at one time you are receiving just 1000 rupees you would be more likely to spend the amount or spend greater proportion of that amount. And that is going to stimulate consumption or expenditure in the economy. Attention and salience are also relevant as far as government influence is concerned. With so many messages aimed at us every day by a variety of sources, it takes a special message to have a persuasive effect. Overcoming what is called the 'yeah, whatever' heuristic.

Salience can also be relevant in environmental policy where the government is trying to encourage consumers to use fewer resources. For example, to reduce oil use, a government may require all new cars sold to advertise their fuel economy figures. Social factors such as the desire for conformity may also be relevant here, and these factors apply in particular to what are often seen as social problems like smoking, binge drinking, and teenage pregnancy. In all cases, it can be difficult for government policy to overcome the relevant status quo bias and 'yeah, whatever' heuristic.

When habits are costly, like smoking, governments should think like the opposite of the firm and present anti-smoking campaigns that highlight the aggregated annual expenditure on smoking. So, just as we say that marketers should break larger amounts into smaller components, the government, when trying to prevent individuals from smoking, should combine the daily expenses on an annual basis. The amount would turn out to be substantial.

For example, someone spending, say, Rs. 3,000 in a month on cigarettes would be spending 30,000 rupees in a year; he might not actually be aware of such huge expenses. But if that is highlighted, then that may have an impact on his consumption of smoking or the expenditures incurred on it. So, at the end, we summarize what we learned in mental accounting. Mental accounting is the set of cognitive operations used by individuals and households to code, categorize, and evaluate financial activities.

There are three main aspects of mental accounting. The perception of outcomes and the making and evaluation of decisions. The assignment of activities to specific accounts. And the determination of the time periods to which different mental accounts relate. So here, in this context, we also learn about the hedonic editing hypothesis, which primarily has four principles.

Segregate the gains, integrate the losses, integrate smaller gains with large losses, and segregate small losses with large gains. These are the four principles. Besides that, we have also learned that transactions confer two different types of utility: acquisition utility and transaction utility. So with this, I conclude this module on mental accounting as well as the topic of mental accounting. Next, we are going to discuss or begin with the topic of intertemporal choices.

Thank you.