ECONOMIC CONCEPT: THE TIME VALUE OF MONEY – IS WAITING WORTH IT?

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We have all heard the phrase "Time is Money." Intuitively, we all know that our time has value. If we spend our time working, we know we get paid a certain amount per hour of work, sales or production of units, etc. Exchanging our time for income is a familiar concept. However, time itself has a value, which can be measured (expressed as a price) through competition in a free market.

One thing we can assume is that a good or service (or money received from selling a good or service) is more valuable to us (and has more utility) today, rather than some later time. In other words, present value is greater than future value for the same quantity of a good, service or money. The idea, "a bird in the hand is worth two in the bush," is not just about the relative certainty of the having the one bird versus the other two; it's also about the time it would take to get the two birds after the one in hand is let go. Remember, Economics is the study of the production, distribution and consumption of scarce resources (scarcity: a condition of *limited* *resources* and *unlimited wants).* In light of scarcity, we are forced to decide what we want most, given the resources we do have, and make choices. We must determine our unique preferences, make trade-offs and sacrifice one thing for another. In other words, scarcity requires us to economize.

If we economize effectively, we maximize our satisfaction, given our limited resources. We have discussed how the forces of supply and demand (as expressed through prices when there is competition) allocates scarce resources to their most valuable uses at any point in time. However, producers and consumers of goods and services can also choose to enter

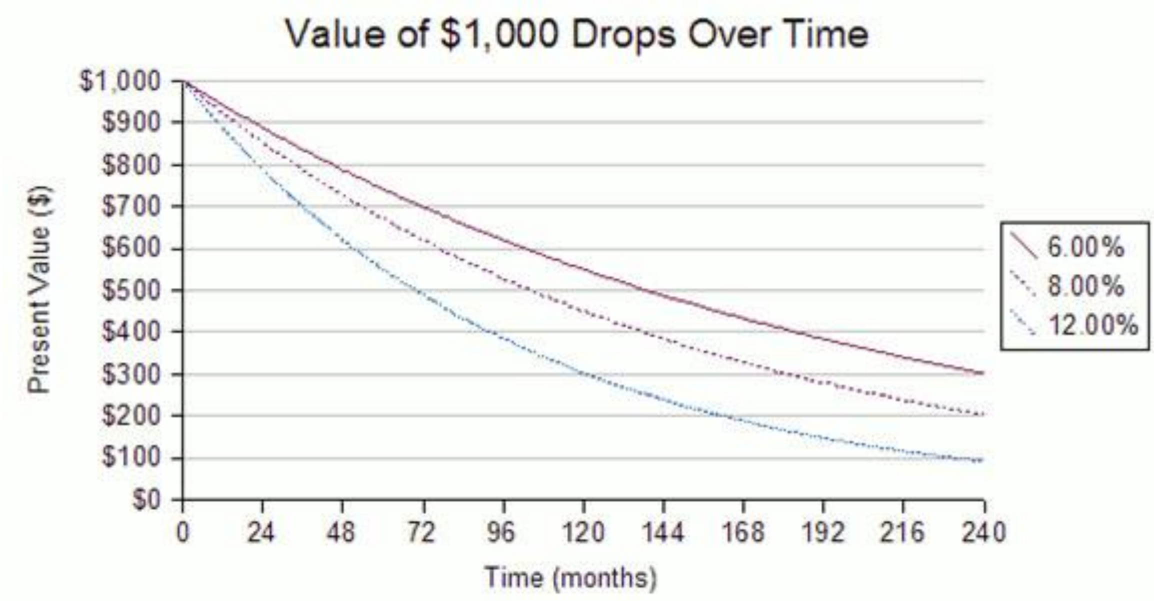
into an economicexchange now, or wait until a later time. A producer could receive payment today in exchange for delivering the good or service later on. Likewise, the good or service could be delivered today and the price paid later on (credit). This is why you will typically pay a lower total price for a good or service when you pay in full, rather than make payments over time. The Time Value of Money explains how individuals place a price on time, in such a way that scare resources are allocated efficiently over time.

So why are goods, services and money more valuable to us today than the same amount would be in the future? Because they can be used today to start benefiting the consumers and producers that receive them now. But how much is this worth per unit of time?

First, let's remember that all goods and service have a market value (as expressed in prices determined by supply and demand under competition). Since the market value (the price) is expressed in terms of money, the value of goods and services can be quantified and expressed also in terms of money. The difference in value of that money across time, measures the time value of money (and the value of the goods and services, and resources it represents).

MEASURING THE VALUE OF MONEY

If you have $1000 today, you could spend that money on a good or service, or you could save it for future purchases. The value of that unspent money in the future, is the $1000 plus the interest you expect to earn from today until then. If the market interest rate were 6%, you would expect your $1000 today to grow to $1060 in one year. In this case, $1060 in one year is worth $1000 today. At 6%, a year from now, $1000 is only worth $940 today. In other words, the same way you would grow money by earning interest, one can learn what the value of money was in the past, based on removing the same amount of interest.



The supply and demand for goods and services compete in terms of time, as well as quantity. If my marginal utility of having new shoes today is high (higher than what I would receive later by saving the money), I may choose to spend my money (or even borrow some on credit), rather than save. Someone else whose marginal utility for the same pair of shoes is lower (than the money they would have if saved until a later date), will wait to buy those shoes (and perhaps loan me money to buy mine on credit). This supply and demand between having goods, services and money now versus later, determines the market interest rate (which is a good proxy for the time value [price] of money).

WAGES

The concept of time value can affect wages as well. Workers that receive wages immediately as effort is performed, are paid less than workers who put in effort for some time before they are ever paid. Take the case of doctors and their staff. Doctors actually lose money for many years (by paying for education and then working in their practice until they build a clientele of patients). In return, they expect to receive more money in wages later on, to compensate for the time value of money they have lost. Aside from other reasons of relative supply and demand for a doctor's labor, doctors would always be paid more than their assistant and staff, who have been paid wages all along. If this were not the case, people would not want to become doctors, because the costs would not be worth the benefits (over time). This would lead to a shortage of doctors. Likewise, if staff in a doctor's office were paid the same as the doctor, there would be an excess supply of staff competing for those positions. Remember, this excludes differences in skills, education and supply/demand for these roles. Just based on the time value of money itself, doctors would be paid more than their staff.

Put simply, doctors invested their money and time early, to acquire the skills that allows them to provide the service people need, tomorrow. Therefore, the time value of money says that those skills are worth far more over time; hence a patient or insurance company pays more for them tomorrow. While the staff, who did not invest the time and money to acquire those skills, but chose instead to learn along the way and be paid today, would not enjoy the same value tomorrow. Makes sense?

Just as individuals have difference preferences about which goods and services they consume, they also have preferences about when they consume them (and when they part with their money). Producers make similar choices about what to produce, when to produce it, when to borrow money to produce it and when to sell it.

Time is indeed money! Understanding this is important to *The Future of Your Wealth*.