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Money's Diminishing Marginal Utility and Correlation between Happiness and Money

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Abstract: *Law of Diminishing Marginal Utility states that successive consumption of a good or service provides lesser satisfaction or utility. Now Money is nothing more than a means to buy goods and services. Hence it logically follows that money should also have diminishing marginal utility with increasing income and wealth. This causes one to inspect the correlation between happiness and money. And if the correlation between happiness and money is insignificant at higher levels of income, then isn't it obvious that a great equality of income, wealth and consumption will maximize happiness and welfare.*

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I. Introduction

Utility, in Economics, is the total satisfaction or benefit derived from consuming a good or service. While it is impossible to exactly quantify utility derived from a good or service, it is possible to estimate and compare utility derived from good or service.

The law of diminishing marginal utility says that as we consume more of a good or service the amount of satisfaction produced by each additional unit of the good declines. The change in utility derived from additional good is marginal utility which decreases, with successive consumption.

Hence the question arises that if marginal utility of goods and services decreases, then does it logically follow that marginal utility derived from money also decreases with successive consumption. This is also deeply connected with correlation between money and happiness. Of course one expects strong correlation between money and happiness, but does the correlation between happiness and money weaken after increase in income.

This paper explores these and other issues.

Law of Diminishing Marginal Utility

The law of diminishing marginal utility states that as consumption of good increases the marginal utility (or the additional utility) from each additional good decrease. Utility is an economic term to denote happiness or satisfaction. Marginal Utility is the incremental increase in utility resulting from consumption of additional unit. In simple terms the law of diminishing marginal utility means that the more of an item that you consume the less satisfaction you get from each additional unit consumed or used.

Let us understand this through an example. Say one is consuming ice cream. And say it is tasty and hence one wants to consume more ice cream. Now let us assume that the first ice cream you ate gave you 100 units of utility. The second ice cream is unlikely to give you 100 units of utility and say it gives only 80 units of utility. The third ice cream barely gives you 50 units of utility. And the fourth ice cream gives you 20 units of utility and the fifth ice cream is so painful to consume that it actually gives you negative utility of -10.

This in short is law of diminishing marginal utility. Successive consumption of good will give you less and less utility.

What about money?

What about money. Is money also subject to diminishing marginal utility?

Of course some uses of money are mandatory and there is no discretion to it, such as food, education, healthcare and housing. Of course food eaten for entertainment is discretional as is housing size.

Say to simplify our model these are discretionary components of expenditure.

1. Travel for Pleasure
2. Clothes for Exhibition
3. Houses

Now we have money to spend on these categories of expenditures.

Say we do not have any house and rent one furnished house. Clearly it will give us happiness – lots of it – say 100 units. What about second home in the same city? Clearly there is very little use of it and hence the utility declines rapidly. Still say since it provides diversion. It could give 50 units of utility. The third house will give much less utility say 20 units.

Similar is the situation with clothes. The first 10 pair of clothes is essential and will give say 100 units of utility. The next 90 pair of clothes will not add 900 units of utility but may add another 200 units of utility. And the next 900 pair of clothes will not add 9000 units of utility but may add another 700 units of utility.
Consider travelling for pleasure. The first vacation in a year may give 100 units of utility. The next vacation will give 50 units of utility, assuming it is same place. And the third vacation to same place will give 0 units of utility.
Now money is what money buys. If all that money buys suffers from diminishing marginal utility does it not follow, that money itself will have diminishing marginal utility.
Hence one expects that the correlation between money and happiness will be rather weak. Let us survey literature on this issue

Correlation between money and happiness
In a study by Shigehiro Oisho, Youngjae Cha and Asuka Komiya, the income happiness correlation was 0.13 and this ranged from 0.12 to 0.18 in the USA, 0.06 to 0.15 in West Germany, and 0.17 to 0.27 in the Russian Federation. Interestingly in slums of Calcutta India, the income happiness correlation was 0.45. What this means is that the correlation between happiness and income is not very strong. However the correlation between happiness and income is very strong in poor communities as demonstrated in Calcutta. Also the correlation is higher when income inequalities are higher.
Some studies held that more money does make people happier but only until 75000 dollars. After that higher incomes do not result in more happiness. Hence the happiness does not increase significantly after 75000 dollars.
What about multimillionaires. Here studies confirm that money does not make someone significantly happier. Thus multimillionaires are just as happy as ordinary people. However the happiness levels increase after 10 million dollars. And even there these people with more ten million dollars are not significantly happier.

What does this mean for policy?
Let us summarize our conclusions. Firstly at very low levels of income, as seen in Calcutta there is strong correlation between happiness and money. After that the correlation between money and happiness is rather weak but is slightly stronger where inequality is high. Again the correlation between happiness and money becomes very weak after certain level of income is reached.
Hence is one wants to maximize happiness, it makes sense to take money from those income groups where correlation between money and happiness is weak and give money to those income groups where correlation between money and happiness is strong.
This is what governments do by taxation at higher ends of income spectrum and transfer payments at lower end of income spectrum.
This study only contributes to the fact that correlation between money and income is very feeble at 0.13 and certainly less than 0.2. And this correlation between money and income almost disappears after certain levels of income.
Hence it makes sense to explore what is the level of equality to maximize happiness. If money does not add to happiness at all after certain levels of income, does it not make sense to take away all the money from that income group and give significant to those income groups where correlation between happiness and money is higher.

II. Conclusion

Happiness is a concept not adequately studied in economics. Of course inequality has been studied deeply in economics. What is needed is for a greater study on the correlation between happiness and income, to determine what a more optimum level of equality is. The available evidence on correlation between happiness and income seems to suggests that inequality leads to waste of money as judged by the outcome of happiness. This calls for greater introspection and correction of governmental policies.

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