

THE SOCIAL ROULETTE: A GAMBLE OF CHANCE AND INEQUALITY IN TIMES OF ECONOMIC CRISES

UTSA KAR* and SARTHAK SARKAR
St. Xavier's College, Kolkata

Abstract

This paper seeks to scrutinize the relationship between gambling and economic crises stemming from a plethora of factors which are but not limited to war, political turmoil, social upheaval and general unrest but at a micro-economic level with respect to individual behavior which has been the foundation for preceding literature on this topic in establishing a rather macroeconomic background to gambling as an economic behavior by employing a general qualitatively defined utility function. We specify this analysis to even greater degree by zeroing in on the subsection of the population which has been empirically identified as the recipient of a stratification induced social sedimentation of multifaceted risk factors which significantly metastasizes the propensity to gamble. Finally, we suggest certain targeted policy prescription to effectively mitigate certain risk factors and satisfy our mathematical analysis of the same.

JEL Classifications: D81, D71, J15, D64

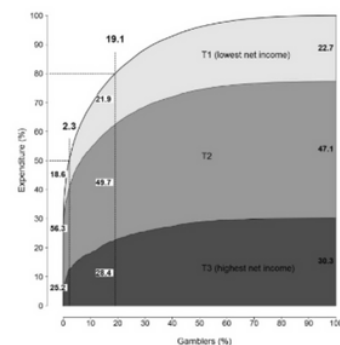
Keywords: Probabilities, Rationality, Uncertainty, Choice and Demographic.

1. INTRODUCTION

The idea of gambling has been omnipresent across much of the entire temporal spectrum of human existence on this planet. What hasn't been constant is its societal perception and subsequently its status and associations, case in point, the American card game of poker used for gambling purposes, is believed to have its ancestor in the card game named "As-Nas" which was a royal game played in the courts of Ancient Persia which gained popularity in the USA during its various wars as its pastime for the gentry and other migrants from across the Atlantic. The prevalence of gambling is not a mere coincidence however as the core principle of risk-taking that such a game involves and indulges is something intrinsic to the fundamental nature of humans as well who are naturally inclined towards the practice of gambling on a day-to-day basis in their lives albeit without the particular designation of it being gambling. However intrinsic might it be, it isn't something that has had a positive public perception of it on its side for the longest time. On a geographical, cultural and temporal scale, it has had varied responses to it. In

eastern Asian countries such as Japan and China where such practices are believed to have originated, it is something that is woven into the indigenous culture without any barriers to entry or accessibility. This is extremely relevant when compared to their neighboring state of Hong Kong which had been under British rule with greater colonial influence persisting beyond the years of occupation, has a blooming business culture centered around the practice of gambling in highly organized and regulated enterprises known as casinos which earn the government a significant portion of its revenue in

Figure 1: Gambling and Income



Source: Grönroos et al., (2022)

and of itself as well as attracting tourists from various countries.

These occurrences aren't just random results of an unrelated sequence of events rather they are a direct product of the economic behavior as molded by various factors such as culture, history so on and so forth. Hong Kong being a British colony was an attractive economic destination during the era of British Hegemony over the world order which meant that indigenous communities were routinely oppressed and marginalized by a colonial overlords which fostered certain habits among the gentry of the city one of them being gambling in many forms which proliferated rapidly to the extent that even legislative mandates couldn't eradicate it from the public sphere especially that of the people belonging to the lower strata of society which in turn brought about a negative connotation of the practice. This isn't too dissimilar to how gambling became a resort for the African American community in the United States especially during the inter war period landmarked by the economic collapse of the great depression alongside the onset of the second world war which accrued massive economic, social and moral costs to the American populace especially the marginalized groups. Hence, these factors are largely a determinant of people's choices of consumption and gambling amidst a period of turmoil, economic or otherwise.

Gambling in the current status quo is somewhat treated as a taboo because of its nature as a game of chance as well as its most concentrated prevalence in groups which are already associated with a negatively skewed perception. The organic reasons or rather the variables which lead to the parametric establishment of gambling is something that had piqued our interests leading us to evaluate the various determinants of rational choice under uncertainty and people's approach towards the idea of risk accommodating changes in expectation as well as psychological factors which affect the aforementioned aspect of consumer choice.

Large scale economic crises are often most accurately analyzed on the basis of micro-level changes in behavior of the people as that is the level where it is reflected to the greatest degree. This is exactly what our paper seeks to find namely the changes in consumer choices with respect to increase in macro-level risk surrounding income and other means of livelihood in the form of parameterized adjustments brought on by the occurrence of economic crises

akin to that of the great depression or the world wars which as stated before has had far reaching consequences on the psyche of the consumers naturally changing their patterns of consumption and inclination towards risk taking behavior. This is especially true of the marginalized communities because of a trickle-down amplification of adverse economic shocks which affect these group the quickest and hit them the hardest as they bear the brunt due to their presence at the very grassroots level of economic activities such as daily labor and employment opportunities in the similar bracket. This is why our paper has selectively chosen to magnify the plight of marginalized groups and why specifically the change in their consumption patterns on the pillars of historical precedence ergo empirical evidence has been scrutinized under the scope of this paper. This adds a new dimension to the already present literature studying choice under risk. The dimension of social inequality which has perpetually been a part of human history. Here, we add this into our analysis of consumer behavior and prove the counter intuitive notion of an increase in such choices despite a rise in the degree of risk associated with it in terms of various crucial factors directly tied to the very livelihood of such marginalized groups in society. This also percolates into the moral dimension of consumption choices which are made relevant too in our analysis of this shift in consumption pattern.

It doesn't however, end here as even crises as recent as the COVID-19 pandemic showed a greater deal of general interest and participation in activities involving a game of chance offered at a certain investment level due to various factors which were amplified due to the crisis such as a buoyant stock market even in the face of a catastrophic humanitarian and economic crisis which set back society by a considerable amount of time. This reflects that the question which this endeavor seeks to answer remains relevant in the present scenario as well alongside the various determinants which are duly explored in the literature review section of this paper. In fact, the prevailing technological environment not only facilitated the proliferation of information pertaining to gambling but also provided the platforms to do so, which naturally encouraged people to invest more even though they were facing an acute economic crisis. This further strengthens the need to understand and process the microeconomic relations governing the increased

demand for such gambling activities.

Another aspect worth looking into is that of societal structures enabling the activity. The very first question that can come into one's mind reading this is the possibility of gambling and its subsequent consumption patterns in privileged portions of society as, beyond its negative connotation as a hobby, there is also a prevalent narrative which lionizes the practice of gambling in casinos and makes it a symbol of higher status and thereby associating that activity with that of glee, glamour and gallantry, even paradoxically so, in the instance of Hong Kong, which as aforementioned emerged as a direct consequence of colonial oppression has become in this status quo, one of the most highly sought after destinations for conspicuously consuming gambling as an activity. A similar perception runs true for the city of Las Vegas in California which has its fair share of history regarding gambling which is deeply engendered by the entrenched social hierarchy. Examples of the same alongside these two runs abound across time and space. This kind of a contradiction however is not in the purview of our paper because of various reasons starting with the relative insularity of the privileged against adverse economic shocks as well as the absence of incentive in the form of upward social mobility make it trivial to our motivation and research question which specifically attempts to develop a micro-theoretic model based on consumer choice theory.

Hence, the introduction can be concluded at this point with the summarization and reiteration of our approach towards gambling and its proven correlation with macro-level adverse economic shocks in the form of a micro-economic approach which takes into the account the various factors involved in the decision-making process of the consumers. We take the analysis one step further by focusing on a particular stratum of society for the reasons we have mentioned above which will be substantiated academically in the literature review section. Now, we move onto the crux of the paper which encompasses the complex variables which shape the theoretical framework of our analysis against the backdrop of the research question to be stated in the following section.

2. RESEARCH QUESTION

What is the micro-economic background to the established yet counter-intuitive notion of increased participation in activities involving a payoff/utility mired in uncertainty in the face of a macroeconomic crisis affecting society at large especially with regards to the disadvantaged communities of those societies who face a greater existential risk in the circumstances endangering their lives and livelihood?

3. LITERATURE REVIEW

The brunt of any adverse situational or macro social and economic changes like the Economic crisis of 2008 or the Great Depression of 1929 is borne disproportionately by the weaker and marginalized sections of society. Layoffs are more severe in the informal sector leading to widening income inequality in society and higher levels of uncertainty. If economic rationale were to prevail, the fall in income for any individual or household should translate into increased thriftiness in response to uncertainty. However, studies conducted in Iceland show how the enduring economic recession that followed the collapse of the Icelandic banking system in 2008 led to a rise in gambling amongst the poorer sections of the society. A similar survey in New Zealand revealed that more individuals from ethnic minority groups like the Māori were engaged in gambling after the economic crisis than before. The Italian economy was severely affected by the Great Recession, which started around 2008. The gambling industry in Italy still grew during this period despite the economic decline. Researchers also found that as the male unemployment rate rose, which is an indicator of worsening economic conditions, people spent more on luck-based gambling. This leads us to the pressing question that our paper seeks to resolve: What are the factors causing such paradoxical change in behavioral pattern and what are the policies that could deter the same? The decision to gamble is incumbent upon a spectrum of cognitive, contextual, cultural, socio-structural and economic factors. The classical deprivation or strain theory of Devereux (1980) establishes a direct correlation between factors such as low levels of education and disadvantaged socio-economic positions with higher states of anxiety, leading to compensatory patterns of

behavior like gambling. The frustration from job loss or lowered income is heightened during any economic crisis when job creation is also on the decline. In such a situation gambling provides the means to release tension without having a disruptive impact on social order (Beckert and Lutter 2009). It constitutes a recreational activity with no adverse repercussions. Given the dismal actuality of existing social inequity, it would not be a gross misconception to identify the vulnerable sections of the population with lower educational levels and hence higher cognitive biases leading to systemic overestimation of the probability of winning and poor risk assessment capabilities. Additionally, the knowledge of their lack of means excludes them from the imaginative consumption of conspicuous commodities such as luxury cars and fine clothing. But the “fantasy world of the big win” can be bought at a cheap rate of a lottery ticket (Horva'th & Paap, 2012) intensifying the lure of the lottery as a vehicle to solve their financial woes. Friedman and Savage (1948) show that unskilled workers might prefer an actuarially fair gamble that offers a small chance of lifting them out of the class of unskilled workers into the “middle” or “upper” class to the certainty of income, notwithstanding the fact that the former choice is far more likely to make him one of the least prosperous unskilled workers. As the notion of meritocracy and ascriptive inequality gets reinforced during any period of economic austerity, further constricting the gamut of opportunities for upward mobility, members from lower strata find the apparent egalitarian distribution of chance of success in gambling which is independent of skill, class, education, or family background more attractive. However, memories of hardships faced in childhood due to excessive gambling by a family member act as deterrents and negatively impact the substitution rate of gambling with activities that ensure a sure source of income (Casey, 2021). In the event of an economic downturn, austerity policies abound. In cultures where individual autonomy and consumerism are celebrated, people experiencing financial hardships are more likely to opt into gambling during these times than in cultures valuing prudence and productivity.

4. METHODOLOGY

Since we are primarily concerned with the optimized decision making by consumers, we go ahead and

develop corresponding utility functions to be associated with the consumption bundle of the consumers. Naturally, the characteristics binding standard utility functions apply here. For the sake of simplicity, we introduce the functional form of the utility relation and then present them in a linear form for direct derivations.

Table 1: *Relevant notations*

Variables	Denotation
I	A fixed amount of income
ω	chance of upliftment
α	degree of economic crisis
$P(\cdot)$	Subjective probability of winning the gamble
U_L^G	Utility function of a gambler from the lower strata of society
U_L^N	Utility function of a non gambler from the lower strata of society
$I(\cdot)$	Income of an individual as determined by the crisis level affecting the economy

Source: Authors elaboration

ireater deal of general interest and participation in activities involving a game of chance offered at a certain investment level due to various factors which were amplified due to the crisis such as a buoyant stock market even in the face of a catastrophic humanitarian and economic crisis which set back society by a considerable amount of time. This reflects that the question which this endeavor seeks to answer remains relevant in the present scenario as well alongside the various determinants which are duly explored in the literature review section of this paper. In fact, the prevailing technological environment not only facilitated the proliferation of information pertaining to gambling but also provided the platforms to do so, which naturally encouraged people to invest more even though they were facing an acute economic crisis. This further strengthens the need to understand and process the microeconomic relations governing the increased demand for such gambling activities.

Another aspect worth looking into is that of societal structures enabling the activity. The very first question that can come into one's mind reading this

4.1 MATHEMATICAL MODEL: FORMATION AND FUNCTIONING

As aforementioned, social hierarchy plays a key part

in our analysis of gambling behavior, in order for the model to reflect this particular attribute, we devise two separate utility functions corresponding to one's social status or position in social hierarchy. This is reasonable assumption from an intuitive standpoint especially in the context of our analysis where the primary source of utility is income earned from wages. Ample empirical evidence and economic analysis exists on the incidence of discrimination on wage, which solidify the reasons on the basis of which we include this a negative function of exploitation stemming from lower social status, starting from Becker's (1957) pioneering paper in establishing a correlation between taste-based discrimination and wages. Discrimination in terms of employment and returns from the same are well documented across many social disciplines, some instances of which is Hirata, Soares (2016) which are although tangentially related to this particular aspect of discrimination as there is a greater emphasis on the economic significance of the same. Nevertheless, they ultimately attest to the fact that there exists a negative effect on utility from lower social status. This effect is multi-fold as lower social status accruing to discrimination and prevalent stratification also trickles down in creating harsher living conditions, adverse social and psychological environment which result in disutility for the individual consumers. Even physical health is worse off for the people belonging to marginalized communities with a higher likelihood of being positioned in disadvantageous position in society. These facts need accurate representation in any formulation of a utility function for a general consumer. This proves to be an additional burden on the income of the consumer making it convenient for us to explain this factor We accommodate this by creating assigning the utility function U_H and U_L to denote the utility function for someone belonging to a higher and lower social stratum. Since our analysis is mostly focused on the latter, we first define U_H to be the income of the consumer belonging to the higher stratum as follows:

$$U_H = \bar{I} + I(0) \quad (1)$$

Here, $I(\alpha)$ takes the maximum value as it is a decreasing function of $\alpha \in (0, 1)$

U_L , however, requires even more specialization to accommodate the two primary types of consumers belonging to the lower stratum pertinent to this

paper namely, the gambler and the non-gambler. The utility function for the non-gambler is a straightforward linear equation which is the sum of the income and the negative of income as function of alpha. This reflects the factors we have stated above barring alpha which will be explained in a separate paragraph. Let us denote this utility function by U_L^N

$$U_L^N = \bar{I} + I(\alpha) \quad (2)$$

Now, for the gambler's utility function, we incorporate the basic premise of calculating the prospective winnings of a gamble into the function where, there remains two possibilities i.e., one being of accruing losses from gambling and the other being that of winning from the gamble. We assign a probability distribution to the chance of winning the lottery which can be categorized as something good/bad depending on the skewness of the distribution, thereby being interpreted as the mean chance of winning which is directly proportional to its quality. There is also a subjective probability assigned to the actual rate of the gambler to signify the chance of realization of an aspirational value that stems from the desire to attain a higher social status which is also tied into the probability of winning from that gamble as income remains a key determinant of social status. This probability is subjective for a multitude of reasons namely: the social status of the person which determines to an extent, the ability to gather and subsequently process information regarding the possibility of winning said gamble which may be skewed due to perceptive and cognitive biases stemming from hearsay and so on. On top of which, lottery sellers do not reveal the statistically accurate measures of winning as in selling their product, they market their product which appeals to everyone and doesn't deter them in anyway as a statistical number on a lottery ticket may plausibly do. Thus, the utility for a gambler is composed of the three factors in the following way:

$$U_L^G = P(\alpha)\{\bar{I} + I(\alpha) + G.1\} + \{1 - P(\alpha)\}\{\bar{I} + I(\alpha)\} \quad (3)$$

The final and most important variable in our analysis is that of α which represents the degree of economic crisis in the country. α is a representative variable indexed upon various macroeconomic indicators such as unemployment, core inflation, wage growth or lack thereof, all of which are psychologically

factored into economic decision making by consumers due to their direct impact on the livelihood of the target demographic of this research endeavor. However, to avoid the computational complexities and umbrella assumptions pertaining to the degree of effect of these factors, we use α to indicate proportionate changes in the level of crisis affecting the stakeholders in our analysis, which precludes the idea of a threshold and converts the variable into one wherein the central idea is condensed into a factor affecting the perception and subsequently decision making of these people. We take a continuous domain for α because of the fact that economic crises in general are mostly identified and dealt with in posterity of the actual crisis occurring. Secondly, an economic crisis is not just a function of tangible machinations which form the foundation for any economic system to thrive. It is also contingent on the psyche of individuals which admittedly are mostly reactionary for a vast majority of the people. For example, recent housing crises (China, 2021 and USA 2008) which has had global consequences have not been existent on just a discrete point in time, instead existing in varying intensities over a temporal spectrum which means that the impacts of the said crises will also affect the endogenous variables so identified in ways which are to be made clear in the upcoming paragraphs alongside the mathematical implications of the same. This makes it easy to correlate and conclude on a relation as the second part of our analysis with respect to gambling, it is a key component in determining the various components of utility so identified, especially for the lower strata. Then, we must qualitatively ascertain the relationship between each variable in order to better understand the dynamics of this model. Similar to gambling, we omit the presence of an economic in the utility function associated with the higher stratum of society because of an empirically proven insularity of the higher classes relative to the lower stratum against economic shocks as well as its general unimportance in terms of our analysis. Hence, α is null for U_H . Income(I) is a negative function of α because higher degree of economic crisis affects the income through inflation, unemployment and others in a negative way. Mathematically, it can be expressed as follows:

$$I = I(\alpha) \tag{4}$$

$$\frac{dI}{d\alpha} < 0 \tag{5}$$

P is a negative function of the crisis factor as one values their chances of winning to be lesser in the face of increased widespread uncertainty.

$$P = P(\alpha) \tag{6}$$

$$\frac{dP}{d\alpha} < 0 \tag{7}$$

On the other hand, ω representing one's chance in upliftment is the strongest when there is no crisis occurring and gradually decreases with the increased intensity of the crisis. ω is a decreasing function of α where, $\omega, \alpha \in (0, 1)$.

$$\omega(0) = 1 \tag{8}$$

$$\omega = \omega(\alpha) \tag{9}$$

$$\frac{d\omega}{d\alpha} < 0 \tag{10}$$

At this point, we develop the relationship between two utility functions of gambling and non-gambling respectively.

$$\omega(\alpha)U_L^G = \omega(0)U_L^N \tag{11}$$

Where U_L^G and U_L^N are defined by equations (2) and (3)

We primarily use an equality sign to denote the relationship between the utility functions, this is significant because gambling as a commodity involves choice under risk which by convention shouldn't be preferred to certain income. Hence, we use this equality sign to find a level of G which is consumed even when the utility from gambling during a crisis discounted by the factor $\omega(\alpha)$ is exactly equal to the utility from not gambling during periods of relative stability, which when derived with an inequality greater than 0, gives us the sufficient conditions for consumption of gambling given utility levels. This condition embodies the essential idea of a reduction in chances of upward mobility in times of crisis due to the exacerbation of existing discriminatory social norms that necessitate resorting to gambling to keep one's utility intact at pre-crisis levels.

4.2 COMPARATIVE STATICS AND FINDINGS

4.2.1 LEMMA 1:

Consumption of gambling as a good is contingent on a direct relation between the utility functions

which is only possible when the utility from gambling exceeds the utility from non-gambling. This is intuitively easy to understand from a utility maximizing perspective. We further derive the results mathematically in the appendix A.1 and arrive at the necessary conditions required for gambling goods to be consumed. It takes the following form:

$$\frac{\{I + I(\alpha)\}\{1 - \omega(\alpha)\}}{P(\alpha)\omega(\alpha)} = G \tag{12}$$

G is greater than 0 if and only if the product of the income and (1- ω) is greater than 0 which is only possible when omega or the aspirational factor is not equal to 1. The aspirational factor is equal to 1 only in the case when alpha takes the value 0 and as explained earlier, in the absence of an economic crisis, the aspirational rate can take the highest value solely because at that point of social stratification is the least stringent compared to a time period amidst an economic crisis. This reasoning for this is quite clear as it is a combination of deficient demand for goods, translating to that of labor leading to lower overall income coupled with austerity policies implemented by the government and general price inflation causing higher strain on lower strata due to a low base of income in the first place. Secondly, to add to that, there are the adverse medical and socio-cultural factors compounding the issue further to the detriment of the populace. Due to a large prevalence of poorer living standards and greater exposure to hazardous environment led to more harm for the people. This also eventually spills over to the chance of attaining a higher status as a vicious cycle tends to form imprisoning people in the same stratum and thus reducing ω . With reference to the equation above, it is clear that consumption of gambling as a good is directly proportional to the income I and inversely proportion to the perceived chance of winning owing to cost minimizing behavior and the chance of upward mobility owing to increasing despair arising out of a worsening crisis.

4.2.2 COMPARATIVE STATICS

Increase in Economic Crisis(α) Mathematically, it will be an increase in the value of alpha which when incorporated into the model corresponding to the degree and direction of response, will cause primarily income to fall because of the added mental, medical and societal costs of living accruing to a heightened

economic crisis faced by an individual from the lower stratum resulting in lower standards of living. This kind of general and widespread concern will pervade into the physical and mental space of the individual who will now be more likely to perceive that lotteries will be less likely to earn them any sort of winning whatsoever, causing the subjective probability of winning the gamble much lesser. On the other hand, the omnipresent notions of ascriptive inequality will get reinforced in the minds of the people as well as be a detrimental factor in reality against the possibility of upward social mobility for the person, implying that omega too would fall as established earlier providing greater incentive for indulging in gambling. To support this, mathematically, we employ differentiation to arrive at the following equation:

$$\frac{dG}{d\alpha} = \frac{P(\alpha)\omega(\alpha)\left[-\frac{d\omega}{d\alpha}(I + I(\alpha)) - (1 - \omega)\left(\frac{dI}{d\alpha}\right)\right] - (1 - \omega)(I + I(\alpha))\left(\frac{dP}{d\alpha}\omega + \frac{d\omega}{d\alpha}P\right)}{(P(\alpha)\omega(\alpha))^2} \tag{13}$$

Therefore, for $\frac{dG}{d\alpha} > 0$ (14)

$$0 < \frac{\frac{d\omega}{d\alpha}}{\omega(0) - \omega(\alpha)} < \frac{\frac{dI}{d\alpha}}{I + I(\alpha)}$$

Which when checked for positivity condition leads us to the intuitive condition (showed in equation 12 & 13) that a fall in chance of upward mobility with respect to the initial chance has to be greater than the fall in income with respect to the initial income for the person to engage in greater consumption of gambling goods. Given fulfilment of this condition, we arrive at the following conclusion:

4.2.3 LEMMA 2

An increase in the level of economic crisis plaguing a country has a positive effect of the consumption of gambling whose incidence is higher on the lower stratum of society who also bear a disproportionate amount of strain at many levels due to the aforementioned change.

5. POLICY PRESCRIPTION

5.1 GOVERNMENT MANDATED DISCLOSURE OF STATISTICALLY ACCURATE WINNING PROBABILITY BY THE LOTTERY ORGANIZER

We have intuitively shown people assign progressively lower values to their probability of winning the lottery as uncertainty increases. This value can be safely regarded as being less than the

actual probability of winning. If the government were to mandate disclosure of statistically accurate winning probability by the lottery organizer, the probability of winning would cease to become a function of uncertainty and the factor of asymmetric information would be eliminated. For \bar{p} greater than p of α , accurate perception of chances of success would induce individuals to buy lesser lottery tickets at any given level of crisis.

$$\text{Let, } \bar{P} > P(\alpha) \tag{15}$$

$$\text{Then } \frac{\{I + I(\alpha)\}\{1 - \omega(\alpha)\}}{P(\alpha)\omega(\alpha)} > \frac{\{I + I(\alpha)\}\{1 - \omega(\alpha)\}}{P\omega(\alpha)} \Rightarrow G < G \tag{16}$$

5.2 GOVERNMENT AIDED SUPPORT PROGRAMS TO DISINCENTIVIZE GAMBLING

The government could guarantee a social security scheme to reverse the causality between gambling (G) and crisis-born uncertainty assuring enough income to offset the conditions derived in Lemma 2 and ensure lesser participation in gambling on the virtue of a reduced vector of causative factors pertaining to the economic societal and psychological. An amount is lying within the interval defined below when given to individuals of the lower-income group, would effectively deter gambling during periods of economic austerities.

$$\left(\bar{I} + I(\alpha) - \frac{\omega(0) - \omega(\alpha)}{\frac{d\omega}{d\alpha}} \frac{dI}{d\alpha}\right) < S < (\bar{I} - I) - \frac{p\omega(1 - \omega) \frac{dI}{d\alpha}}{\frac{d\omega}{d\alpha} + (1 - \omega)\left(\frac{dP}{d\alpha}\omega + \frac{d\omega}{d\alpha}P\right)} \tag{17}$$

6. CONCLUSION

Our model has been a micro-theoretic analysis of the gambling preferences of individuals belonging to the lower-income stratum against the backdrop of an economic meltdown. There are a host of socio-economic and cultural factors that influence this addictive behavioral tendency, of which we have chosen to foreground the following few: i) Uncertain income as captured by the term $I(\alpha)$. Labor laws are slackened in the wake of any economy-wide financial crisis, making way for exploitation, unfair reductions in wages and disproportionate financial hardships for lower-income households. ii) Perceived probability of success (here, winning the lottery) as being dependent on macro-level uncertainty represented by P . As the prevailing instability palls

the future, individuals expect lower gains from all sources of income including the games of chance. iii) The imminent mechanism of upward mobility for individuals in the lower strata is portrayed by ω . The chances of navigating into the higher classes get increasingly hindered with the increase in the macro-risk factor owing to the exacerbation of institutional and societal discrimination. Having made a clear distinction between the utility derived from not gambling and gambling, we assumed that individuals refrain from gambling in the absence of instability. Equating the discounted utility from not gambling and gambling we derived the number of lottery tickets that the individual needs to consume in periods of uncertainty wherein factors i) and iii) positively influence gambling while factor ii) has a negative impact. The fact that the lure of a “big win” offsets the decreased expectation of succeeding at the game of chance explains the latter causality. Next, we find an increase in gambling tendencies with a rise in instability, provided his or her fall in chances of upward mobility outweighs the proportional fall in income due to the uncertainty. Despondence over the limited scope presented by a crisis-torn society to climb up the income ladder reflected by increased rejections of job applications based on ethnicity, religion, etc., acts as a far greater incentive for the individual to resort to gambling than a mere fall in income. Gambling becomes a vehicle of hope for upward mobility. However, increasing preference for gambling as opt-out mechanism breeds within the individual a resigned acceptance of one’s current situation and undermining of work ethics, both of which leads to impacts on a societal level: individuals refrain from making real efforts to improve their disadvantaged position, become less productive at work, and hence reduce their usefulness to the economy in recovering from the crisis. As a result, we have prescribed government intervention in the form of the following policies to restrict such behavioral tendencies: a) Government man-dated disclosure of accurate winning probability would lead to a relatively correct analysis of chances of winning, and hence reduce gambling. b) A social security scheme for poor people could act as compensation for the increased exploitation and reduction in income, thus decreasing gambling tendencies with a rise in uncertainty. This paper embodies a novel attempt to build a theoretical model on the rise in the seemingly irrational consumption of gambling commodities by the disadvantaged

section of the population during unstable periods controlling for a range of emotional, social, economic and cultural factors. The scope of this model could be furthered by including these factors and aiding households and the government in

moderating gambling tendencies. Hence, the idea of the titular social roulette is well and truly realized in the course of the paper through a multitude of forms ranging from one of birth and one of dearth and probabilistically one of both in the gamble of human life.

APPENDIX

Mathematical Derivation of Non-Gambling condition (NGC)

$$U_L^G = U_L^N$$

$$\Rightarrow \bar{I} + I(\alpha) = P(\alpha)\{\bar{I} + I(\alpha) + G.1\} + \{1 - P(\alpha)\}\{\bar{I} + I(\alpha)\}$$

Taking $\bar{I} + I(\alpha)$ to the *L.H.S* and taking $\bar{I} + I(\alpha)$ common

$$\Rightarrow (\omega(0) - \omega(\alpha))(\bar{I} + I(\alpha)) = GP(\alpha)\omega(\alpha)$$

$$\Rightarrow \frac{\{\bar{I} + I(\alpha)\}\{\omega(0) - \omega(\alpha)\}}{P(\alpha)\omega(\alpha)} = G$$

Which is nothing but equation (12)

REFERENCES

1. Agrawal, T. (2014). Gender and caste-based wage discrimination in India: some recent evidence. *Journal for Labour Market Research*, 47(4), 329-340.
2. Beckert, J., Lutter, M. (2009). The inequality of fair play: lottery gambling and social stratification in Germany. *European sociological review*, 25(4), 475-488.
3. Berson, C. (2016). Local labor markets and taste-based discrimination, *IZA Journal of Labor Economics*, 5(1), 1-21.
4. Capacci, S., Randon, E., Scorcu, A. E. (2014). Luck vs skill in gambling over the recession. Evidence from Italy.
5. Casey, E. (2021). Gambling, deprivation and class: Reflections from a UK case study. *Critical Gambling Studies*.
6. Devereux, E. C. (1980). *Gambling and the social structure: A sociological study of lotteries and horse racing in contemporary America* (Vol. 1). Ayer Company Pub.
7. Friedman, M., Savage, L. J. (1948). The utility analysis of choices involving risk. *Journal of political Economy*, 56(4), 279-304.
8. Grönroos, T., Kouvonon, A., Kontto, J., Salonen, A. H. (2021). Socio- demographic factors, gambling behaviour, and the level of gambling expenditure: A population-based study. *Journal of gambling studies*, 1-17.
9. Hirata, G., Soares, R. R. (2016). Competition and the racial wage gap: Testing Becker's model of employer discrimination.
10. Horváth, C., Paap, R. (2012). The effect of recessions on gambling expenditures. *Journal of Gambling Studies*, 28, 703-717.
11. Olason, D. T., Hayer, T., Brosowski, T., Meyer, G. (2015). Gambling in the mist of economic crisis: Results from three national prevalence studies from Iceland. *Journal of Gambling Studies*, 31, 759-774.

12. Wheeler, B. W., Rigby, J. E., Huriwai, T. (2006). Pokies and poverty: problem gambling risk factor geography in New Zealand. *Health place*, 12(1), 86-96.