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Monetary and Non-monetary Gift Exchange

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1. INTRODUCTION

A standard labour contract has two important components, agreed upon wage from principal and efforts that in return is provided by agent. On one hand both principal and agent have full knowledge of wage, while information on provided effort level is always incomplete due to its abstract nature. Principal can only observe output of agent, which is joint function of effort, skill level and work environment [Green (1992)]. Assuming economic agents strictly follow their material gain, the game theoretic model predicts that agent will utilise minimum possible effort level. Similarly, the principal will pay minimum wages, since additional wages cannot extract additional effort.

In contrast, the gift exchange model (GEM) is based on the critical assumption that reciprocal behaviour creates a positive relationship between wages and workers' effort levels [Akerlof (1982, 1984)]. Workers are assumed to reciprocate higher wage levels from firms by increasing their effort (positive reciprocity) and /or by decreasing their effort in retaliation for low wage (negative reciprocity). In labour market as partial gift exchange, the loyalty of workers is exchanged for higher wage, and this loyalty then can be translated to higher productivity through effective management. Experimental evidence has supported the reciprocity hypothesis both in laboratory [Fehr and Falk (2008); Fehr, *et al.* (1993); Fehr and Tougareva (1995); Fehr and Falk (1999); Fehr, *et al.* (1998); Fehr, Gächter, and Kirchsteiger (1997)] and in the field [Falk (2007); Henning-Schmidt, *et al.* (2005); Bellemare and Shearer (2007)].

In the real world, we find widespread use of both monetary and non-monetary incentives for labourers. Monetary incentives include provision of reward in terms of money i.e. such as commissions and bonuses, while non-monetary incentives involve non-cash payments (in-kind perk, small gifts, tickets to restaurants, picnics, social event organised at work place, encouraging employees by providing them job autonomy, involvement in decision-making, recognition certificates, assigning challenging duties, etc). It is traditional in economic theory to convert non-monetary incentives into money equivalents, and deal with only one type of incentive for labour.

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However, emerging research shows that the two types have different effects. For example, "*According to a March 1998 survey by The Gallup Organisation Inc. and Carlson Marketing Group Inc., almost 70 percent of the 2,000 IT employees polled said nonmonetary benefits provide the best motivation for sticking around. The study also revealed that employees favour recognition from managers and supervisors by a margin of almost 2 to 1 over recognition such as large cash bonuses or salary raises tied to productivity*". [Villano (1999), para. 5].

Jeffrey and Shaffer (2007) give distinct features of tangible gifts like justifiability, social reinforcement, separability and evaluability. In his influential paper, Jeffery (2002) analysing the use of monetary and non-monetary motivational strategies, argue that cash doesn't have the trophy value, does not have long life—it comes and goes. Non-monetary incentives, on contrary, have higher trophy value thus higher utility value is attached to it. Monetary rewards are treated as compensation (for doing hard work), while non-monetary rewards are treated as recognition [Pfister (2007)], and these are treated differently by employees. Any monetary incentive merged with the salary is considered as salary and not as rewards. Experiments based on concepts from social exchange theory have clearly shown that the economic implication for both kinds of incentives differ significantly [Heyman and Ariely (2004); Kube, *et al.* (2008)]. Even though nonmonetary incentives are commonly used in real world, economic literature implicitly or explicitly assumes that non-monetary incentives can be translated to monetary equivalents, which introduces bias in research.[1] The objective of this paper is to capture gift exchange mechanism in labour market specifically using monetary and non-monetary gifts. Under standard assumptions of economic theory, non-monetary gift (diary here) should result in similar productivity gain to its equivalent cash alternative. Many labour market studies, using this argument, pool up all money and non-money incentives into their monetary equivalent by ignoring the practical implication of using different kinds of incentives.

The exchanges in labour market are assumed to operate through market norms, where employees exchange their effort and time for monetary rewards. Heyman and Ariely (2004) argue that we are living in two markets simultaneously: social and money market. There is strong conflict between the two markets; money market operates strongly on the basis of payment and material gain. Exchanges in money market are on-spot, sharp and short term in nature. Exchanges in social setup are long term, coordinated, consistent and independent of magnitude of payment. Any occurring exchange operates either in money market or through social network, so if one is used other one is driven out. Heyman and Ariely (2004) in series of experiment using monetary and non-monetary incentives for real effort task show that reciprocal behaviour for monetary gift was lower than non-monetary gift and was sensitive to magnitude of payment. This perspective can shed light on the well-established observation that people sometimes expend more effort in exchange for no payment (a social market) than they expend when they receive low payment (a monetary market). [Heyman and Ariely (2004), p. 787]. They also show mixed markets of both social and monetary norms more closely resemble monetary than social markets.

[1]There are only few exceptions for non-monetary incentives as motivational tool in labour market like Kube, *et al.* (2008) and Bandiera, *et al.* (2009). Ariely (2008), Heyman and Ariely (2004) in their series of experiments showed that non-monetary incentives work more than reciprocal behaviour, these help to build consistent long-term response which is independent of magnitude of payment.

This paper borrows heavily from Heyman and Ariely (2004) and Kube, *et al.* (2008). Both of these studies find that non-monetary gift provide stronger incentives than equivalent monetary gift. However, Heyman and Ariely (2004) attribute this higher efficiency to gift exchange mechanisms [GEM], while Kube, *et al.* (2008) attribute it to kind intentions signalled through non-monetary gift.

We have conducted this comparative experimental study in Jun-Sep, 2008 to evaluate the use of two different incentives in gift exchange framework. We have chosen two kinds of gifts for testing the GEM: non-monetary gift (Diaries) and cash equivalents. Results are similar to that of Heyman and Ariely (2004) and Kube, *et al.* (2008): non-monetary gifts result in significantly higher productivity gain compared to cash equivalents. Further, this experiment was extended to investigate the asymmetry of reciprocity using both kind of gift. We have invited few of subjects (due to budget constraint) for second round and paid them originally announced wage. Results supported the asymmetry of reciprocity, a stronger negative behaviour was observed in monetary gift group. Discontinuing non-monetary gift also resulted into productivity loss, however, significantly less than cash gift group.

This paper contributes to existing literature in many ways. First of all it provides additional experimental evidence of reciprocal and social exchange theory which is mainly tested in lab environment, except Kube, *et al.* (2008). While there are many lab studies proving gift exchange mechanism, field evidence is not always convincing [Kube, *et al.* (2006, 2008); Gneezy and List (2006) and Henning-Schmidt, *et al.* (2009)].

Secondly, experiment also provides alternative explanation for use of non-monetary gifts. As discussed earlier, Kube, *et al.* (2008) attribute the efficiency of non-monetary incentives to kind intentions signalled by 'the gift' aspect of non-monetary gift. In addition to kind intentions, we also found greater pleasure and trophy value of non-monetary gift which yields higher utility gain from non monetary gift. Separability of non-monetary gift also inflates personal value attached to it. People do not evaluate assets collectively; they rather make separate mental accounts for each type of incentive. In such case "the neutral reference point for evaluating the cash bonus will be the employee's base salary, and will make the award more subject to the value-reducing effects of diminishing marginal utility" [Jeffery (2002)].

Thirdly, while there are many studies on asymmetry of reciprocal behaviour, we are not aware of studies comparing asymmetry of reciprocity using monetary and non-monetary gift. Our study has supported the asymmetry of reciprocity for both kinds of gifts. The patterns were however very different. Cash gift created stronger response to act of taking back the incentive, while positive reciprocity dominated in non-monetary gift. The explanation came within our data set that cash award is soon mixed with higher wage, while non-monetary gift is treated as 'the gift'. Intuitively, a wage cut should have stronger response than discontinued gift.

Finally, experiment also provided additional evidence for preference-decision conflict observed by Hsee, *et al.* (1999): the preference and labour supply decision for gifts were not consistent. Hsee, *et al*. (1999) attributed this to pseudo-value attached to money due to high fungibility in joint valuation. An additional explanation comes from Heyman and Ariely (2004) they argue that mixed market will resemble more to money market. Additional psychological features attached to non-monetary incentives that seem

working in non-monetary gift treatment may not be able to alter predicted utility of reward in joint evaluation

The remainder of this study is organised as follows. In Section 2, we describe our experimental methodology. In Section 3, we present our results and discussion. Section 4 gives the extension of experiment for negative reciprocity. Section 5 concludes the study.

2. THE EXPERIMENT

A set of 120 students were selected randomly from different universities through an advertisement displayed on notice boards.[2] Wage was announced as rupees 120 per hour in advertisement. The subjects were hired without any knowledge of being part of any experiment. There were total 179 calls from interested student of which a group of 120 students was selected randomly.[3]

The pool of selected subjects was randomly divided into four groups (i.e., control group, monetary gift treatment, non-monetary gift treatment and choice treatment groups) of thirty each. The students were informed to report on separate days. The experiment was organised in four hourly sessions with ten minutes break between each session.

They were assigned a task to grade multiple choice question (MCQ) answer sheets with given answer keys.[4] Each MCQ answer sheet had 100 questions with five possible answer options (A, B, C, D and E).The subjects have to match answer sheets with the answer key. Answer sheets were of three different types, coded as versions A, B and C along with their respective answer keys. The description of the questions were omitted, and set of answer sheets were mixed randomly just to minimise the chance of memorising answers with practice that can create a confounding factor. The subjects have to calculate the number of correct questions and write it on the session record sheet (Appendix A2). At the end of each session, recorded sheets were collected. The output is define as

$$Output = Total\ checked\ questions - mistakes$$[5]

The experiment was conducted at separate office in university. Few popular magazines (sports and fashion) and newspapers were deliberately placed in the room. A half hour paid training session was also conducted before experiment to make them familiar. Both monetary and non-monetary gifts were announced, immediately after the training session. The subjects were not monitored directly; however, coordinator was available for help if needed. Furthermore, all subjects interacted with the same project coordinators to eliminate experimenter effects.

The control group was paid the advertised wage i.e. 120 rupees per hour; in the monetary treatment group an unexpected 31 percent wage increase was announced after training session(additional 37.25 rupees per hour). In non-monetary group, New Year diaries (of worth rupees 150) were presented as gift along with their announced wage. For the choice treatment, after training session they were given a choice to select a diary

[2]We would like to thank Hisham Tariq, Muhammad Amjad Malik and their teams for providing their valuable research assistance during execution of field experiment and university administration for providing structural support, without them this was never possible.

[3]The list of all candidates was arranged in the order they called to show their willingness to participate in project. First 120 subjects were selected from randomly shuffled list of candidates.

[4]The task was not cognitive, so according to Pink (2008) it will respond to monetary incentives.

[5]Papers were later rechecked by especially designed software.

or additional 150 rupees apart from announced wage. For comparison purpose, the monetary worth of two gifts was kept same.

After experiment, all subjects were asked to fill the post experiment questionnaire. Question had information on gender, major, preference for monetary and non-monetary incentives and Big 5 personality test.

To analyse the asymmetry of reciprocity, last ten subjects in monetary and non-monetary gift groups were given option to participate in the same job for second day as well. All of them opted to continue for the next day. Before start of second day's session, wage for that day was announced as per originally advertised wage i.e. rupees 120 per hour. No one refused to complete the job, rest of the experimental procedure remained same.

3. RESULTS AND DISCUSSIONS

Main findings are

- Non-monetary incentives performed significantly better than monetary incentives, temporal dimension shows productivity gain remained significant over experiment.
- Despite stated higher preference for money, higher effort level was provided in non-monetary gift treatment. Productivity gain due to non-monetary gift is attributed to both kind intentions and greater trophy value of non-monetary gift.
- Higher job satisfaction was also reported by non-monetary gift group.
- Significant asymmetric behaviour was observed after discontinuing both monetary and non-monetary gift.
- The negative response to discontinuing non-monetary gift was significantly less than the negative response to discontinuing monetary increase in wage.

3.1. Non-monetary Gift Performed Well

In simple non-parametric analysis,[6] the gift exchange mechanism is working for both kinds of gifts at 10 percent. By introducing monetary gift, i.e., an unexpected 31 percent wage increase resulted in 5.5 percent productivity gain that is statistically significant at 10 percent. Many earlier studies also reported positive wage-effort relationship [Fehr and Falk (2008); Fehr, *et al.* (1993); Fehr and Tougareva (1995); Fehr and Falk (1999); Fehr, *et al.* (1998); Fehr, Gächter, and Kirchsteiger (1997)].

Non-monetary gift treatment resulted in significant 15 percent increase in average output with an equivalent 31 percent increased labour cost. Productivity gain due to non-monetary gift is, however, less than reported by Kube, *et al.* (2008); they stated a 31 percent increase in average output with 20 percent increase in labour cost. Perkin (1970) in preliminary study also showed the effectiveness of non-monetary incentives in family planning. Herzberg (2003) on other hand argued that fringe benefits and non-monetary perks do not motivate, spiraling wages on contrary motivate people to seek the next wage increase. Hansen (1980) compared the relative efficiency of monetary and non-monetary gifts (ball point pen) in mail response survey. The monetary incentive was more successful in generating a higher response rate in a shorter period of time. Author attributed this low response to not perceiving correct value of the gift.

[6]Using Mann-Whitney U test (also known as Wilcoxon rank-sum test), is non-parametric test used for two independent sample to test the equality of variable mean

Table 1

Details and Summary Statistics of All Groups

	Control Group	Monetary Gift		Non-monetary Gift		Choice Group
		Gift*	No Gift**	Gift*	No Gift**	
Gift Given	No	Yes	No	Yes	No	Yes
Day	1st	1st	2nd	1st	2nd	1st
Mean	633.75	666.98	451.75	730.83	581.5	675.25
St. Dev.	133.3	118.9	100.7	139.9	101	128.3
Median	625	670	475	735	580	680
Min	330	380	280	400	390	330
Max	940	1000	630	1120	760	1100

*Unexpected gift was given with wages. **: upon arrival on second day, subjects were told that they will be given their originally announced wage only (i.e., no gift will be given to them).

In choice treatment, only 4 (13 percent) students out of 30 chose non-monetary gift. In kind gift is very unlikely to match its recipient's preferences in joint valuation with cash. There was a significant 6.4 percent productivity gain compared to control group in choice treatment.

Choice treatment performed statistically equal to money gift and significantly less than non-monetary gift (Table2). Kube, *et al.* (2008) have tested choice treatment in separate lab session; more than 92 percent of subjects have chosen money.

Table 2

Comparison between Treatment Groups

	Choice	Monetary	Non-monetary
Control	Z=2.3 (0.020)**	z=1.8 (0.069)*	z=5.05 (0.000)***
Non-Monetary	Z=3.3 (0.001)***	z=3.6 (0.000)***	
Monetary	Z=0.5 (0.620)		

*** significant at 1 percent , **significant at 5 percent, and *significant at 10 percent level of significance.

3.1.1. *Discussion*

An explanation for the productivity differences are based on the theory presented by Heyman and Ariely (2004). Non-monetary gift is perceived more as gift and produce higher reciprocal behaviour. In social market, effort level is mainly derived through altruistic behaviour and social norms and level of reciprocity thus remains robust for different level of compensations. In money market reciprocity is supposed to be affected by magnitude of compensation i.e. increasing the monetary incentive will increase the magnitude of effort accordingly. However, Falk (2007) in his fundraising experiment found positive linear relationship between magnitude of non-monetary gift (post cards) and reciprocal behaviour (donation).

Kube, *et al.* (2008) attributed higher output in non-monetary gift to kind intentions signalled from using non-monetary gift as compared to monetary gift. Kind intentions from employers were also remained high for non-monetary gift in our post experimental questionnaire; differences are significant at 10 percent level.

Jeffery (2002), in his seminal work, argued non-monetary incentives have ability to address variety of psychological needs, so would have a deeper and long-term effect on motivation. Non-monetary incentives, due to high visibility, have greater trophy value so possess greater utility level. To test the argument, a trophy value index was calculated from set of questions (they will enjoy gift for long period of time, pride associated to gift and they are likely to tell their friend and family about their gift, for details see Appendix A4) by taking simple average of three ranks. Results showed significantly higher trophy value for non-monetary gift. Similarly gift perception for diary was significantly higher than money wage. Money on other hand quickly gets confused with high salary or payment, agents adjust their perception of wage and effect will die out. Assuming this true, subject should respond strongly to perceive wage cut than discontinuation of gift incentive. This argument has been tested and supported for asymmetry of reciprocal behaviour for both kinds of gift in Section 4.

Table 3

Mean Scores of Control Variables

	Control Group (1)	Monetary Gift (2)	Non-monetary Gift (3)	Choice Treatment (4)	p-value±
Enjoy Gift for Long Period	–	3.8	4.6	3.8	0.032**
Proud to Receive Gift	–	3.9	4.5	4.0	0.105
Tell Friend and family	–	3.9	4.4	4.1	0.234
Trophy Value Index	–	3.9	4.5	4.0	0.009***
Gift Perception	–	3.7	4.4	4.3	0.073*
Payment Perception	–	4.0	4.0	4.5	0.829
Fairness of contract	4.5	4.1	4.2	3.7	0.588
Risk Behaviour	4.7	4.0	3.9	4.3	0.680
Job Satisfaction	4.3	4.5	5.1	4.4	0.003**
Kindness from Employer	4.9	3.9	4.6	4.1	0.072*

± p-value of difference of ranks among monetary and non-monetary gift groups only Columns 1 to 4 give the average ranks given to given variables.

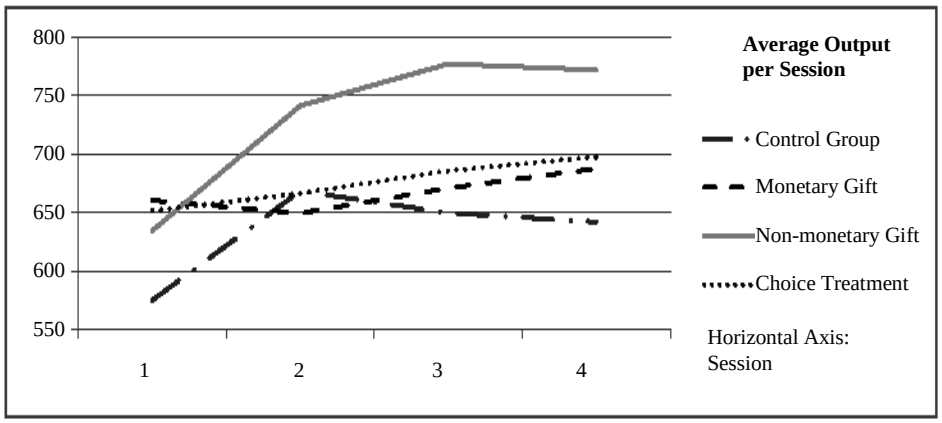


Fig. 1. Average Output Per Session

The regression results for the data are given in Table 4. The dependent variable is the number of correctly checked questions, while treatment effects are measured using treatment dummies for these groups in comparison to control group. Column 1 gives the OLS estimates using aggregated individual level output, results are in line with Table 2. Column 2 to 5 gives robustness of treatment effect using control variables. The model is extended by incorporating temporal dimension, and interaction of time with treatments. The list of control variables is divided into two categories, ability based and socio-economic variables. Job ability or job behaviour characteristics are measured using Big Five Personality test—a famous test used by firm for hiring. The test scores five personality traits associated with work behaviours, i.e., openness, conscientiousness, extraversion, agreeableness and neuroticism. Socio-emotional variables included the data on age, major subject in university, previous wage (if any), monetary preference and gender.

Table 4

Robustness Analysis

Variable	(a)	(1)	(2)	(3)	(4)
Constant	2535	588.2	756.8	670.8	518.3
	(64.52)***	(28.56)***	(73.53)***	(85.54)***	(40.21)***
Monetary Treatment	132.93	53	48.03	45.06	47.5
	(92.0)	(39.0)	(38.4)	(38.8)	–39.24
Non-monetary Treatment	388.3	31	27.9	27.6	29.6
	(91.25)***	(42.0)	(41.7)	(41.1)	–41.1
Choice Treatment	166	48	42.1	40.9	45.3
	(91.25)*	(38.0)	(38.1)	(38.5)	–38.24
Time	–	18.2	18.2	18.2	18.2
	–	(9.44)*	(9.11)**	(9.04)*	(9.29)*
Monetary*Time	–	–7.9	–7.9	–7.9	–7.9
	–	(13.0)	(12.8)	(13.0)	–13.01
Non-monetary*Time	–	26.4	26.4	26.4	26.4
	–	(13.74)*	(13.40)**	(13.18)**	(13.38)**
Choice*Time	–	–2.6	–2.6	–2.6	–2.6
	–	(14.2)	(14.0)	(14.1)	–14.13
Agreeableness	–	–	–	0.6	0.7
	–	–	–	(0.4)	(0.34)*
Socio-Economic	No	No	Yes	Yes	No
Ability	No	No	No	Yes	Yes
Wald Test +					
		0.54	0.50	0.45	0.44
Monetary vs. Non-monetary		(0.588)	(0.616)	(0.654)	(0.660)
		0.14	0.16	0.06	0.11
Monetary vs. Choice		(0.890)	(0.870)	(0.953)	(0.912)
		0.43	0.36	0.40	0.34
Non-monetary vs. Choice		(0.669)	(0.718)	(0.687)	(0.731)

We have estimated same equations Column (2) to (5) through panel GLS with random effect and Got similar results, so decided to report only OLS results. Socioeconomic variables include subject major, previous wage and age, money preferences and gender, while ability includes five personality traits openness, conscientiousness, extraversion, agreeableness and neuroticism. Values given are coefficients, while standard errors are given in parenthesis. +: values are Wald statistics with p-value in parenthesis. ***Significant at 1 percent , **significant at 5 percent, and *significant at 10 percent level of significance.

Despite a deliberate attempt to minimise learning effect (average output is increasing with time), learning remained significant during experiment. Similar patterns were also observed in Kube, *et al.* (2006, 2008), while positive impact of wage increases fades over time in Gneezy and List (2006). Data analysis showed that non-monetary gift resulted into significant adaptation behaviour over time even after controlling for personality traits related to work behaviour and other socio-economic variables. This increase significantly improved over the period of experiment (column 1 to 4), supporting the general perception that social relationship take time to built and improve over time.

After controlling for variables, the treatment effect of both monetary and choice treatment is insignificant over time. Gneezy and List (2006) have found a transient effect of gift on long run outcomes. Kube, *et al.* (2006) also showed ineffectiveness of monetary gift in the long run. Transactions in social exchange via non-monetary gift produced long term and consistent effect on the response [Heyman and Ariely (2004)].

Assuming that after controlling for treatments and time, the effort level provided by the subject is totally due to reciprocity, regressing output on the personal traits shown by the subjects we find personality trait "Agreeableness" insignificant at traditional significance levels, with hetero-corrected standard errors. High agreeableness score indicate cooperative and compassionate personality that tends to reciprocate good behaviour. Many earlier studies have found agreeableness significantly related to Gift exchange mechanism [Ben-Ner, *et al*. (2006); Englmaier and Leider (2010)].

3.2. High Preference for Money

Traditional utility theory is based on preferences, which are not observable. Under the influence of positivist philosophy, an attempt was made to reduce all theoretical concepts to observable ones. Samuelson (1938) introduced the idea of revealed preferences (RP) as an observable counterpart to preference. An agent is offered a choice between A and B; if she chooses A, then she has revealed a preference for A over B. This transforms an unobservable preference to an observable choice. There is a lot of discussion about whether or not choices do reveal preference in this fashion. See Hausman (2000) or Wong (2006) for a discussion and a critique.

In this paper, we differentiate between three variants of preference: True underlying preferences, stated preferences and observed preferences. True underlying preferences, in this paper context, whether the person feels happier when given money or whether he feels happier when given gift, are unobservable. However we can attempt to measure this by looking at responses to the two treatments, money or gift. If person increases his effort more when given gift, then we can say that he was motivated more by the gift, and therefore infer that he liked it more. The stated preferences are when we asked them to report/state their preferences like we did in our post experimental questionnaire, whether you would prefer money to gift. These preferences are made in hypothetical situations. Lastly the observed preferences are the actual decisions in the real world situations, like most of subjects in our experiment actually chose money gift. In both the real world and hypothetical settings, the researcher does not have information on all the factors that influence an individual's choice that determine the true underlying preferences.

Since the observed and stated preferences choice settings are quite different, there is no reason to believe that the variance of the unobserved factors in the RP setting will be identical to that of the variance of unobserved factors in the SP setting [Ben-Akiva and Morikawa (1990)]. To test the argument, our questionnaire asked subjects to rank (1 to 5 scores) their preference for money and a set of non-cash incentives for their motivational ability at work. To test the stability of stated and observed preferences for this experiment, we first defined a dummy for monetary preference on the basis of preference scores given in questionnaire. The difference between two scores is calculated as d, money preference dummy is defined as

$$m = \begin{cases} 1 & for\, d > 0 \\ 0 & otherwise \end{cases}$$

The proportion of subjects with strictly money preference to total subjects was then tested for its consistency in with observed preference recorded in choice treatment (i.e. 13 percent chose money gift over non-monetary gift).

Table 5

Test of Preference Proportions

	Proportion
Stated Monetary Preference	0.70
Observed Monetary Preferences	0.87
Z Score= 2.3 (Fisher Exact Test: p-value= 0.068)*	

*** Significant at 1 percent, **significant at 5 percent, and *significant at 10 percent level of significance.

Testing for equality of proportion of subjects who strictly preferred money in questionnaire versus observed choice, we failed to reject any significant differences between the two proportions at 10 percent level of significance (Fisher exact test: p-value = 0.068). However, higher stated and observed preference for money is not translated into higher output in the monetary gift group. The preference-labour supply conflict in experiment can be attributed to mismatch of preference, fungibility of money is likely to create higher preference for money [Hsee, *et al*. (1999)]. Hsee (1999) argues that this prediction-decision inconsistency is caused by the presence of a "pseudo-value attribute"—an attribute which provides information about "rational" behaviour—which can cause people to choose their less preferred option. In joint valuation money market mechanism surmount the social norms and non-monetary gift loses its significance as social exchange relationship [Heyman and Ariely (2004); Ariely (2008)].

While we have showed the insignificant differences among stated and observed preferences, the main finding is that the true response to gift was significantly higher for non-monetary gift.

4. ASYMMETRY OF RECIPROCITY

During recessionary periods, wage cuts and discontinuation of incentive is common. While, workers are assumed to reciprocate higher wage levels from firms by increasing their effort (positive reciprocity) they also decrease their effort (negative

reciprocity), in retaliation to lower wage. Asymmetry of reciprocity mean productivity gain due to x percent wage increase may not equal to a productivity loss due to similar x percent wage cut. Studies have shown that workers respond strongly to wage cut than wage increases [Campbell and Kamlani (1997)]. Some experimental studies have also supported the hypothesis of asymmetry reciprocity where incentives framed negatively (as fines and wage reductions) result in stronger response than positively framed incentives [Hannan, *et al.* (2005); Fehr and Falk (2002); Kube, *et al.* (2006)].

To test the argument that non-monetary gift is perceived as "Gift". while monetary gift is quickly mixed with wage increase, we introduced small manoeuvre within our experimental setup to take an additional observation of asymmetric behaviour through monetary and non-monetary gifts separately. After completion of experimental session, we asked last ten subjects[7] in two gift treatments i.e., monetary and non-monetary were given choice to participate in project for the second day as well. Discontinuation of gift resulted into significant decrease in the output of the same subjects significantly.

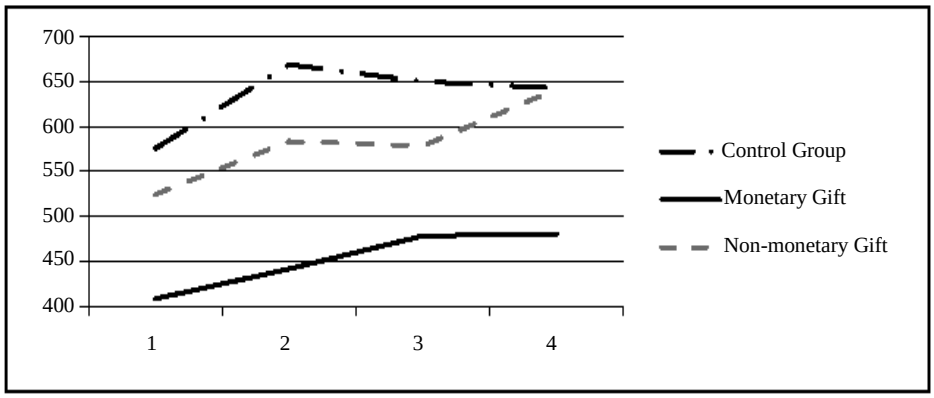


Fig. 2. Sessions with No Gift Graphed with Control Group

The summary statistics for the second day's output is given in Table 1. In monetary treatment, the positive reciprocal behaviour resulted into an increase of 5.5 percent; however, discontinuation resulted in 28.7 percent decrease in productivity. For non-monetary gift the productivity gain due to positive reciprocity (15 percent) is higher than negative reciprocal behaviour (8.3 percent). The monetary gift resulted in stronger negative behaviour compared to non-monetary gift when discontinued. Significant differences were noted when both kinds of gifts were discontinued, the comparison is given in Table 6. This supports the common perception that once introduced, its hard to roll back the cash based incentive programmes.

Fehr and Gachter (2000) and Masclet, *et al.* (2003) worked on monetary and non-monetary punishments respectively; both studies resulted in same conclusion that punishment increases average contributions sharply. The existence of the "non-monetary" punishment, however, increases the average level of contributions and earnings less than the monetary punishment. Herzberg (2003) also suggested that spiraling wages motivate people to seek the next wage increase, if rising wages won't motivate, reducing them might work.

[7]Due to budget constraint, only ten subjects were tested for asymmetry of reciprocity.

Table 6

Comparison of Average Treatment Effect for Sessions with No-gift[8]

	Monetary	Non-monetary
Control	Z=-6.7 (0.000)***	Z=-2.3 (0.024)**
Non-monetary	Z=-4.7 (0.000)***	

*** Significant at 1 percent , **significant at 5 percent, and *significant at 10 percent level of significance.

4.1. Potential Explanation

There are many potential explanations given for asymmetry of reciprocity. First, the Loss aversion, according to Campbell and Kamlani (1997) people tend to value loss more than equivalent gain so effort provided by the labour is more sensitive to wage cut as compare to wage increase. In another experimental study on hot response game, Offerman (2002) showed that people react strongly to intentional hurtful choice than to intentional helpful choice. They contributed this asymmetry of response to self-serving bias. Intentionally helpful act are in line with positive self image of themselves, while intentional hurtful make sharp contrast with positive self image so results and produce strong behaviour.

We can explain the differences in asymmetric behaviour by two gifts, based on idea on mental accounting. People place all their assets in separate mental accounts, for example investment income, home appreciation and precious household item holding. Cash incentive since earned along with employment income, it is likely that subject combine this with rest of employment income. If this occurs, the neutral reference point for evaluating the cash bonus will be the employee's base salary, and will make the award more subject to the value-reducing effects of diminishing marginal utility [Kahneman and Tversky (1979), copied from Jeffery (2002)]. Cash bonuses lack separability as they go into the basic salary mental account; participants often continue to view this money as an increase in total compensation, because it is cognitively aggregated with salary. The value of the cash award for performance does not stand out anymore. Companies can counter this through a ceremony and the like (to commemorate the performance); however,

Non-cash incentives, due to separability, placed in to more specific separate mental accounts (e.g., Travel, Entertainment), etc., and not aggregated with salary account so values separately from basic salary [Jeffery (2002)]. Higher gift perception ranks for non-monetary incentive in our post experiment questionnaire support this argument. A discontinued cash program is perceived as a compensation benefit reduction rather than the end of an incentive program. This becomes even more difficult in a low paid environment.[9] Finally, the nonmonetary gift is usually taken as "gift", where cash incentives take form of rights instead of recognition [Flanagan (2006)].

5. CONCLUSION

Empirical evidence shows that wages in labour markets do not always clear the market: in many cases, firms pay a higher than market-clearing wage, resulting in higher labour supply and involuntary unemployment. A substantial amount of experimental literature favours positive relation among wages and effort, confirming efficiency enhancing reciprocal behaviour [Fehr, *et al.* (1993, 1997); Hannan, *et al.* (2002); Brown,

[8]By Mann-Whitney U-test.

[9]Arnold Light, President of the Light Group at http://www.incentivesmotivate.com/art_cash_vs_ merchandise.shtml.

et al. (2004)]. Social exchange theory came up with investigation of incentives as monetary and non-monetary incentives [Heyman and Ariely (2004)].

Ariely (2008). According to social exchange theory, non-monetary gift facilitate social relationships, signal kind intentions, and hence results in higher reciprocal behaviour. There are only few studies to test the ability to extract reciprocal behaviour in real field settings. One exception is Kube, *et al.* (2008), they have supported social exchange phenomenon in field settings. Our study not only proved the existence of social exchange theory in field but provided an alternative explanation for it as well. Results of experiment strongly support the prediction of social exchange theory and productivity gain due to non-monetary gift was significantly higher than monetary incentives.

Kube, *et al.* (2008) attributed high performance to perception of gift; non-monetary gift is considered as the "gift", and so gives a signal of more kind intentions. Our experiment provided evidence for separability property of non-monetary incentives; tangible non-monetary incentives segregated from the salary carry utility beyond the pure consumption value of incentive. We have also calculated trophy value indicator and results supported the argument by Jeffery (2002). A non-monetary gift on other hand may sit in the living room for years reminding the gift. Employee will evaluate the utility of tangible gift through pleasurable experience he will get from it. Jeffrey and Shaffer (2007) suggested that non-monetary incentives can produce better and cost efficient results as compared to monetary results. Employee may say they want cash but it isn't the most effective incentive always. Tangible rewards are both extrinsic and intrinsic motivators; they have a strong emotional appeal to participants' personal wants and interests. They also provide lasting satisfaction and long-term performance improvement. Cash incentives can produce short term incentives, but have little connection with sustained long run performance improvement.

Despite clean evidence of social exchange mechanism by non-monetary incentive, a higher stated and observed preference for money raised interesting puzzle. Hsee, *et al.* (1999) explained a similar prediction-decision inconsistency by presence of "pseudo-value attribute"—a feature which provides information about "rational" behaviour attaching pseudo value to their less preferred option in joint evaluation. In isolation, higher job satisfaction kind intentions and trophy value rank were given to non-monetary incentive, supporting the argument that monetary gift due to separability evaluated separately from salary.

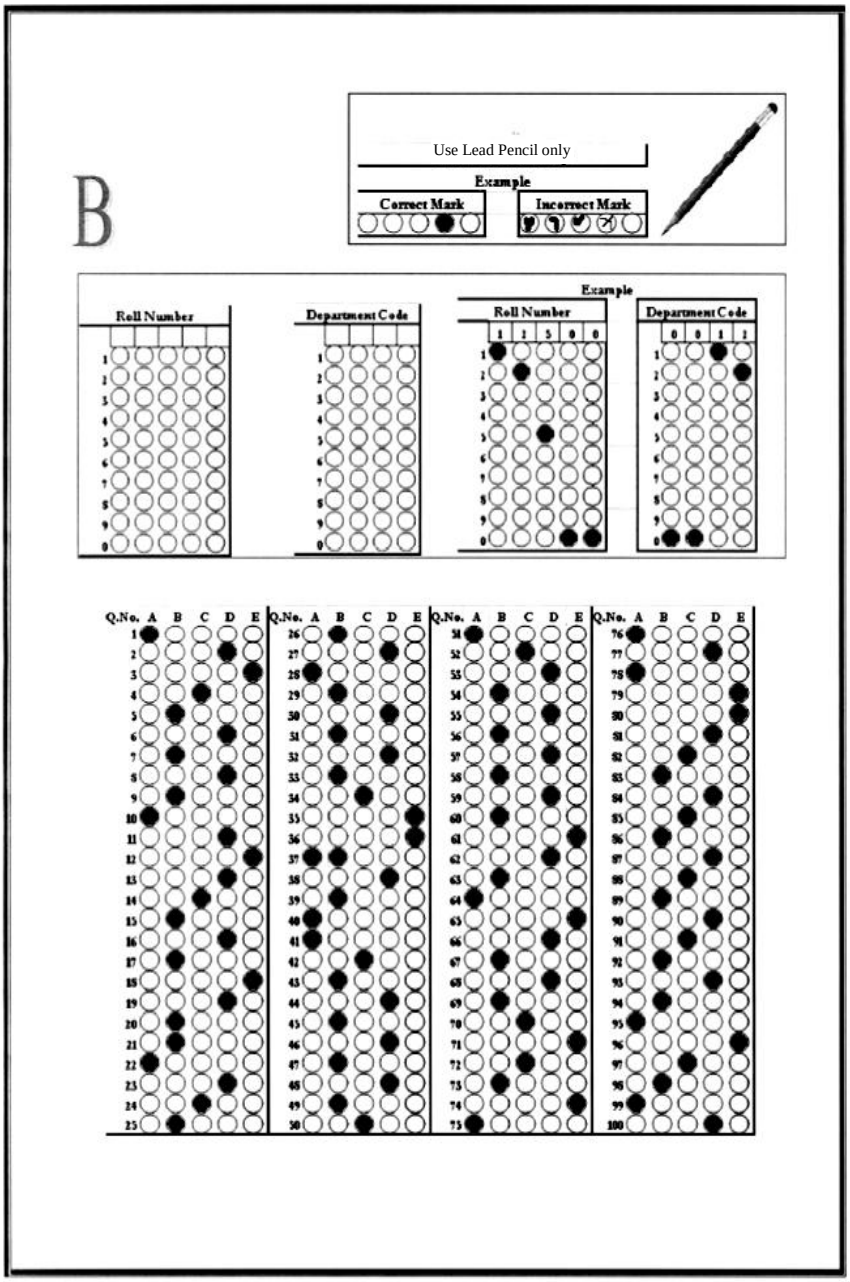
Most interesting finding is significant differences in the asymmetry between both monetary and non-monetary gift. Result show negative reciprocity is stronger for money wage increase compared to non-monetary gift that can be explained by mental accounting of provided incentives.

In low incentive environment where people are unable to fulfil their basic needs, non-monetary incentive may not be as efficient results as predicted by social exchange theory. Similarly, during sluggish economic conditions, the use of non-monetary incentive in combination of monetary incentives may produce cost efficient results. Interactions in labour market are long term and have ability to incorporate social exchange very well. Cash incentives are not the only option, firms may use many alternative tool that can be used to facilitate socio-emotional relationship like more attention, care and appreciating their efforts. In more complicated situations in real world, it worth noting that exchanges in real lift may be very complicated and may not product result strictly similar to such controlled experiment. Workers might respond in many unique directions like sticking to firms in bad times, decide not to quit even if more attractive outside options are present.

Appendices

Appendix A1

Sample Answer Key



Appendix A2

Session Record Sheet

Session No……..

Please enter the roll numbers of each answer sheet after grading it.

Sr. No.	Roll No.					Obtained Marks
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						
17						
18						
19						
20						

Signature:…….

Name:---------- Assigned Code:----------

Date: ----------

Appendix A3

Picture of Diary

Appendix A4

Post Experiment Questionnaire

Name…….. Assigned Code……
Registration No. …….
Department: ……
University
Contact No.
Age ……Years
Gender: Male Female

Previous Wage (if any)…….Rupees/hour, Not employed previously

Section A:

1……is talkative

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

2……tend to find faults with others

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

3……does a thorough job

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

4……is depressed, blue

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

5……is original, comes up with new ideas

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

6……is reserved

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

7……is helpful

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

8……can be somewhat careless

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

9……is relaxed, handles stress well

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

10……is curious about many different things

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

11……is full of energy

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12……starts quarrels with others

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

13……is reliable worker

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

14……can be tense

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

15……is ingenuous, a deep thinker

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

16……generates a lot of enthusiasm

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

17……has a forgiving nature

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

18……tends to be disorganised

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

19……worries a lot

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

20……has an active imagination

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

21……tends to be quite

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

22……is generally trusting

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

23……tends to be lazy

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

24……is emotionally stable, not easily upset

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

25……is inventive

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

26……has an assertive personality

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

27……can be cold and aloof

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

28……preserves until the task is finished

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

29……can be moody

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

30……values artistic, aesthetic experiences

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

31……is something shy, inhibited

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

32……is considerate and kind to almost everyone

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

33……does things efficiently

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

34……remains calm in tense situations

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

35……prefers work that is routine

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

36……is outgoing and sociable

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

37……is sometimes rude to others

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

38……makes plans and through with them

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

39……gets nervous easily

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

40……likes to reflect, play with ideas

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

41……has few artistic interests

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

42……likes to cooperation with others

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

43……is easily distracted

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

44……is sophisticated in arts, music, or literature

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

45……extraverted, enthusiastic

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

46……critical quarrelsome

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

47……dependable, self-disciplined

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

48……Anxious, easily upset

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

49……open to new experiences, complex

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

50……reserved, quiet

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

51……sympathetic, warm

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

52……disorganised, careless

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

53……calm and emotionally stable

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

54……conventional and uncreative

Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Section B

Please rate the following statements on a scale from 1 to 7, where 1 means "fully disagree" and 7 means "fully agree".

1. … will enjoy diary/money for long period of time

1	2	3	4	5	6	7

2. … am proud to receive diary/money

1	2	3	4	5	6	7

3. … will tell friends and family about diary/money

1	2	3	4	5	6	7

4. … perceived as gift

1	2	3	4	5	6	7

5. … perceived as payment

1	2	3	4	5	6	7

6. … risk lover

1	2	3	4	5	6	7

7. … am satisfied with this job

1	2	3	4	5	6	7

8. … treated kindly from employer

1	2	3	4	5	6	7

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