

# TRUST IN SUPERIORS AND DYSFUNCTIONAL BEHAVIORS: AN EXPERIMENTAL STUDY ON BUDGETARY SLACK\*

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## Abstract

**Purpose:** This paper analyzes trust in superiors as an informal control mechanism to reduce budgetary slack. We examine how relationships between trust of subordinates in their superiors and economic incentive reduce the tendency of subordinates to create budgetary slack.

**Methodology:** An experiment was designed with participants who play the role of manager or executive alternatively

**Findings:** Results show that the introduction of an economic incentive does not affect the relationship between trust and budgetary slack.

**Implications/limitations:** This study will let organizations to further the budgeting process by using informal mechanism, such as trust, as a complement to traditional mechanism (e.g. monetary/economic incentives). This enhances the effectiveness of the organization's actions and policies.

**Originality/Value:** The findings of this study complement the results of previous studies on how trust is related to financial and non-financial performance criteria.

**Keywords:** Budgetary slack, Trust, Subordinates vs. Superiors, Economic vs non-economic incentives.

**Paper type:** Research paper

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\* The authors would like to thank the support from the Spanish Ministry of Science and Innovation (Project ECO2011–24613).

## 1. Introduction

Budgets are a key piece of all kinds of organizations. They are related to cost accounting, responsibility accounting, performance measurement, and compensation (Covalenski et al., 2003). Budgets are used for many purposes; planning and coordinating organization's activities, motivating employees, etc. But, especially, budgets are used to allocate resources efficiently in each organization's section. In order to do that, superiors need some information about the organization on the whole. However, typically, subordinates have more amount of information and more specific one than their superiors regarding their expected performance and opportunity sets (Douglas and Wier 2000, Stevens 2002). Budgeting process, understood as allowing subordinates to participate in budget settings, serves to equate these information asymmetries between superiors and subordinates with the aim of doing the most efficient allocation of resources. Nevertheless, when superiors use budgets to evaluate performance, subordinates are likely to misrepresent information in their budgets to increase the likelihood of achieving it using their superior knowledge to unfair advantage (Kren and Liao 1988, Douglas and Wier 2000). This phenomenon is called "*budgetary slack*".

Budgetary slack is created when a subordinate understates his productive capabilities in order to make certain that he will be able to achieve the standards set in the budget (Young, 1985). In this sense, the budget's observance is easier to implement and does not require much effort. We can also define it as budget resources controlled by a manager that excess the optimal to achieve his or her objectives by overstating costs, understating incomes or underestimating performance capabilities (Kren, 2003). Essentially, a misstatement is taken place, which leads to harmful consequences for companies, such as lost business opportunities and/or inflated costs.

Management accounting research on budgetary slack has been extensively based on agency models (e.g., Chow et al. 1991, Stevens 2002). Following this theoretical framework, budgetary slack can be generated by four conditions (Douglas and Wier, 2000; Anthony and Govindarajan, 2004):

- 1) Information asymmetry between the superior (the principal) and the subordinate (the agent) regarding the subordinate's effort or output potential;
- 2) No knowledge about the relation between effort and output;
- 3) Conflicting goals between the superior and the subordinate, and
- 4) Subordinate's opportunism or self-interest

Agency models assume that individuals are economically rational and self-interest, so it is theorized that providing agents (subordinates) with more information than principals (supervisors) must not to result in greater efficiency; because the agents tend to use this information to shirk. We have to take into account that agents: a) act in their own interest, preferring leisure to effort for the

same amount of compensation; b) are work averse, which inclines them to shirk; and c) are risk averse (Anthony and Govindarajan, 2004).

Luft and Shields (2003) pointed out that budgetary slack is one of the most widely researched topics in management accounting; however, results are not concluding about the source of this slack and the way to reduce it. It may be due to researches analyze economic variables, rather than the effect of psychological variables in the creation of slack, such as trust (Covalenski et al., 2003). Maiga and Jacobs (2007) reported that distributive and procedural justice have an impact on trust and budget goal commitment of managers, and trust and budget goal commitment negatively affect managers' propensity to create budgetary slack. Subsequent studies include some research propositions about how variables such as trust in supervisors and goal commitment affect the relationship between justice perception and propensity to create budgetary slack (Özer and Yilmaz, 2011). In this line, Staley and Magner (2007) provided evidence that trust in supervisor is an important variable that affects managers' perceptions of budgetary procedures fairness, but it needs a deeper knowledge about it regarding the specific psychological processes by which budgetary slack is generated (Magner et al. 2006).

Our study tries to analyze how non-economic variables (e.g. trust in superiors) and economic incentives affect to the creation of budgetary slack. A person who does not trust or distrusts in him/her superior can be encouraged with monetary incentives to present budgets with less budgetary slack than if he/she didn't be. But if we encourage with monetary incentives to someone's who trust in the superior, will he/she present budgets with even less budgetary slack than the case above? Or, by contrast, it will be counterproductive? The findings of this study will let to further the budgeting process and provide new tools for management control systems with the peculiarity of being psychological tools, which, as we will show, are a necessary complement to traditional ones (e.g. monetary/economic tools) increasing the effectiveness of the organization's actions and policies.

To achieve these purposes, we conduct an experiment with students from Pablo de Olavide University, who play the role of manager or executive alternatively during experimental sessions. It is interesting to see how trust or distrust arises between participants during the experiment depending on their decisions, how it affects the level of budgetary slack and how a monetary incentive may moderate this effect. The remainder of this paper is structured as follows: In the second section, we review the theory. In the third section we develop the hypotheses that capture the interaction between trust in superiors, economic incentive and budgetary slack. In the fourth section, we detail the research method to test these hypotheses in a laboratory setting. Finally we present the results and conclusions of our study.

## 2. Theory review

### 2.1. *Budget and Budgetary slack*

Budget can be defined as a quantitative economic plan made with regard to time. Thus, budgets are characterized by comprising amounts of economic resources that have to be allocated and used, and these resources must be expressed in economic (i.e. monetary) terms. For thirty years, substantial time and attention has been devoted to the issue of budgetary slack. Conceptual and empirical researches clearly indicate that budgetary slack decisively influences business organizations and has the potential to result in significant adverse economic consequences (Merchant, 1985; Luft and Shields, 2003). Simply stated, budgetary slack is created when an individual budgets for less production or revenues than are actually anticipated, or, when over-budgets expenses (Luft and Shields, 2003). Dunk (1993) defined budgetary slack as the deliberated incorporation of amounts in the budget to make it easier to attain.

Regarding the variables that can affect budgetary slack, we can classify them in: organizational level variables, environmental variables, and individual level variables (Dunk and Nouri, 1998). In the organizational level we can find variables such as budgetary participation, information asymmetry, superiors' evaluative styles, superiors' ability to detect slack, truth-inducing pay schemes or task uncertainty. In the category of environmental variables we refer to variables that can affect the environmental uncertainty, in the sense of external and internal changes unexpected. And between individual level variables we can name risk preferences or aversion to lying. However, within the individual level variables we can identify psychological-cognitive variables that can affect budgetary slack. The psychology-based research investigated the effects of budgeting on a variety of potentially conflicting mental states and behaviors; mainly motivation, satisfaction, commitment, and relations with peers and superiors.

### 2.2. *Trust in Superiors*

Trust is a complex and multi-dimensional variable and its interest and development in the management and behavioral literature lends credence to the fact that trust is important for organizational success and employee wellbeing (Connell et al., 2003). An early definition of interpersonal trust posited by Rotter (1967) stated that trust is “*an expectancy held by an individual or a group that the word, promise, verbal or written statement of another individual or group can be relied upon*” (p. 651). Zand (1972) defined trust as consisting of actions that increase one's vulnerability to another whose behavior is not under one's control in a situation in which the penalty one suffers if the other abuses that vulnerability is greater than the benefit one gains if the other does not abuse that vulnerability. (p. 230).

Hosmer (1995) provided a definition of trust that is rooted in a moral and ethical context. Trust is the expectation by one person, group, or firm of ethically justifiable behavior – that is morally correct decisions and actions based upon ethical principles of analysis – on the part of the other person, group, or firm in a joint endeavor or economic exchange. (p. 399). Deutsch (1958) stated that an individual's decision to trust or not to trust another person is based on three essentials:

- 1) the trustor is presented with an ambiguous path that can either lead to a beneficial or a negative consequence;
- 2) the trustor's perception is that the outcome of their trust decision is contingent upon the behavior of another person, and
- 3) the trustor perceives the harmful consequence to be greater than the beneficial consequence. An individual in this situation makes a trusting choice when they choose to take the path and distrustful choice when they choose not to take the path.

Building trust in the organization includes providing opportunities for the follower to contribute to decision-making that will empower the follower to govern their work and express self-determination (Zhu, May, & Avolio, 2004). Various factors affect follower trust in the superior or leader. Trustees will reduce their perceived trustworthiness if they act opportunistically toward the trusting members (Wicks et al., 1999). When the subordinate trusts the superior, they have a feeling of security about the leader and have determined that the leader will not harm the follower when they have the capacity to do so (Brien, 1998).

The few studies that investigated the effects of superior's performance evaluation behavior on subordinate's trust thus far seem to confirm that upholding social norms of honesty and fairness enhances trust, but yield conflicting results concerning the role of the performance evaluation system (e.g., Hopwood, 1972; Lau and Buckland, 2001; Lau and Tan, 2006). These studies have mainly focused on the superior's choice of performance metrics for evaluating and rewarding subordinate performance. Hopwood (1972), for example, found that subordinates reported higher trust in their superiors, when these superiors measured subordinates' performance strictly against budget. This finding was later confirmed by Lau and Buckland (2001), who showed that trust mediates the relationship between the use of budget-based performance metrics and job-related tension.

### **3. Hypothesis development**

Mayer (1995) conceptualizes trust as a voluntarily situation of vulnerability based on the expectation that the other party will perform in the way that one party expect. There are some levels of trust; from trust to distrust. Trust and distrust are the extremes of a continuum (Rousseau et al., 1998; Worchel 1979), where

trust is based on confidence in another and distrust refers to the concern that another may act in a different way you expect. Distrust has also been defined as a “lack of confidence in the other, a concern that the other may act so as to harm one that he does not care about one’s welfare or intends to act harmfully, or is hostile” (Grovier 1994, p. 240). The generation of trust is a linear continuum that is bounded by high levels of distrust and trust (Singh and Sirdeshmukh, 2000). Following this view, trust and distrust cannot co-exist; distrusting choice and trusting choice are substitutes (Deutsch 2003). So, the increase of distrust is signaled by the decrease of trust, and the way to decrease distrust is also the way to increase trust (Hsiao, 2003)

Trust is a non-personality factor susceptible to change over time when individuals interact each other (Rousseau et al., 1998). Individuals can always shift their initial positions on the continuum trust-distrust while they are networking because trust is an induced mind-set. Therefore, is possible that an individual can change his or her level of trust while trying to solve a problem or making a decision (Rowe, 2004; Zand, 1972). Following Zand (1972), trust can be altered both with and without economic incentives. Furthermore, trust can be related with a reduction in the level of budgetary slack (Staley and Magner, 2007). If managers can trust their superiors and their organization, this state provides superiors with valued material and psychological benefits over the long-run (Magner et al., 2006) that could reduce or eliminate budgetary slack. However, no studies directly addressed the link between monetary incentives, trust and budgetary slack despite the great importance of their interrelation.

Trust is a determining variable of the level of budgetary slack but sometimes, in organizations wrongly tend to lower this level by monetary incentives regardless of it could be counterproductive in some cases. Not always a monetary incentive goes hand in hand to a decrease in the level of slack and this may be explained by trust between subordinates and superiors. Our study tries to analyze what happens on the level of budgetary slack when managers trust or distrust in their superior and they are monetary encouraged to request a budget as accurate as possible to the actual cost. The argument is as follows; if a manager trust in the superior and the superior trusts in the manager, there is a reciprocity based on the belief that the other will act honestly (Berg et al., 1995, Evans et al. 2001), i. e. from the viewpoint of the executive, he expects that the manager will offer him a budget with no budgetary slack. But, in fact, in every budget proposals there is always a little level of budgetary slack even in the presence of trust between the parties. So we assume that budgetary slack still exists in these trust cases.

In this context, the introduction of a monetary incentive may not reduce so much this little level of budgetary slack, wrong with the main purpose of this kind of incentive. Actually, the use of monetary incentive in these cases may not be profitable as the little decrease of the level of budgetary slack does not pay

the amount of money invested in the incentives. Furthermore, the introduction of a monetary incentive when trust exists between the subordinate and the superior not only may not reduce the budgetary slack but may generate distrust and suspicion. The managers may think that if their superiors encouraged them with monetary incentives when it is assumed that exist trust, something is going bad. When individuals begin to doubt that another person is not acting in good faith or honestly (in the sense of hiding information), they manifest suspicion. Suspicion is viewed as one of the principal generator of distrust (Deustch, 1958) and, ultimately, results in a loss of trust. There, we formulate the following hypothesis:

*H1: The introduction of an economic incentive moderates the relationship between trust in superiors and budgetary slack.*

## 4. Methodology

### 4.1. Laboratory experiment design

Experiments is a very suitable research method when the relevant dimensions of the decision environment in which the decision maker interacts with the stimulus and makes the decision are well known (Jacob 2011). Experiments have been used for organizational behavioral researches to examine a wide variety of questions; internal and external policies, tax reporting policies, incentive systems, types of resource allocation decisions, ethical issues, and types of reports. Our experiment design resembles the model of Evans et al (2001) and Berg et al. (1995). We conducted the experiment among voluntary students from Pablo de Olavide University, who received a payment for their participation. The quantity of this payment depended on their performance during the experiment. Before starting the session, subjects had to response a pre-experimental questionnaire, in order to know that they understood the instructions.

We will form groups of two participants. Each group is composed of participant type X and participant type Y. We will randomly assign participants to the type X or type Y. The experiment was anonymous and nobody knows his/her partner. Each participant played alternately the role of manager (subordinate) and executive (superior); i.e. in period 1 the participant X began playing the role of manager and the participant Y the executive, in period 2 the roles changed, the participant Y played the role of manager and the participant X the executive, in period 3, the participant X was again the manager and the participant Y the executive ... and so on up to 20 periods.

When the participant played the role of manager he/she has to submit a budget to his/her partner for a period. Only the manager knows the actual cost of performing; the partner (executive) only knows the probability distribution of costs. When the participant played the executive role, he/she had to decide whether

to approve or reject the budget submitted by the manager. If the executive approved it, the manager gained the “profit” and could add it to an item of adjustment and could get real payment. But if the executive rejected the budget proposal, the manager did not gain any benefits and the trust game continued to the next period.

Once the trust or distrust between participants had been generated (Evans et al. 2001), in period 21 all participants (although they did not know) played the role of manager. They were asked to submit a budget as close as possible to the actual cost so that the executive approved the budget proposal. And, therefore, they could gain the profits of this period. In order to do that, the executive (in this case, a role played by the computer) offered them a monetary incentive.

#### ***4.2. Variables and measurements***

The endogenous variables were: the first budget proposed, which is the earliest manifestation of slack (V1), the final budget proposed in period 20, which is the last manifestation of slack before introducing monetary incentives (V2) (Fisher et al., 2000, 2002) and the final budget proposed in period 21, which is the last manifestation of slack after introducing monetary incentives (V3). Meanwhile, the exogenous variables are: the final levels of trust that each participant set on the partner (V4) and the reciprocity generated during the experiment (V5).

“Monetary incentives” is a control variable that affects trust and therefore the final level of slack. We measure the percentage of slack as  $\mu = 1 - \text{payoff claimed} / \text{payoff available}$ , where the “payoff claimed” is the amount of payoff the subject earns for his item of adjustment based on the subject’s actual budget proposal, and the “payoff available” is the amount that a subject may earn by introducing in his budget proposal the maximum slack (Evans et al. 2001). This formula is used by Evans et al. (2001) to measure honesty but, in fact, it measures defrauds made by participants. So we use the formula to measure the amount of budgetary slack or “defraud” generated.

Trust in the superior was measured with three items from Roberts and O’Reilly’s (1974) interpersonal trust scale. The items are (1) “Superiors at times must make decisions which seem to be against the interest of subordinates. When this happens to you, how much trust do you have that your immediate superior’s decision was justified by other considerations?” and (2) “To what extent do you have trust and confidence in your superior regarding his general fairness?” Each item had a seven-point Likert response scale with the endpoints “Feel Very Distrustful”/“Have Little Confidence and Trust” (1) and “Trust Completely”/“Have Complete Confidence and Trust” (7), and the responses to the items will be averaged. Previously, this measure has been used budgeting studies (e.g., Stanley and Magner 2007, Magner et al. 1995).

Participants had to fill this trust questionnaire twice, first at the end of period 20 and second at the end of period 21 in order to check how monetary incentive

has affected trust. Finally, some authors advocate that trust does not necessarily presuppose reciprocity, and vice versa (e.g. Castelfranchi, 2008) because; (1) if subject X trusts that subject Y will reciprocate his adoption, he is betting on Y reciprocation, (2) if Y reciprocates, X will trust him next time, (3) Y reciprocates so that X trusts him next time, and (4) trust can be about trust, and about a reciprocation of trust. So they are against that trust has necessarily to do with contexts that require reciprocity, due to this we want to measure reciprocity in a specific questionnaire.

The items of this questionnaire are adapted from Ortmann et al. (2000) “How many times do you think you would have approved the budget proposal?” “How many times do you think your partner would have approved the budget proposal?” and Caliendo, Fossen and Kritikos (2012); (Positive reciprocity) “If someone does me a favor, I am prepared to return it return favor” “I go out of my way to help somebody who has been kind to me before return help” “I am ready to undergo personal costs to help somebody who helped me before return costly help” and (Negative reciprocity) “If I suffer a serious wrong, I will take revenge as soon as possible, no matter what the cost revenge” “If somebody puts me in a difficult position, I will do the same to him/her return disadvantage” “If somebody offends me, I will offend him/her back”. The first 2 items had a scale from 0 to 10 and each of the last items had a seven-point Likert response scale with the endpoints 1 (‘does not apply to me at all’) to 7 (‘applies to me perfectly’). The reciprocity questionnaire had been filled by participants at the end of period 20 and after period 21.

## 5. Results

Table 1 shows the statistic descriptive on budgetary slack and trust level before and after the economic incentive, for both roles (subordinate and superiors). To analyze our hypothesis we conduct an Anova before and after the economic incentive was introduced in the experiment. Table 2 shows the results.

	Minimum	Maximum	Mean	SD
Budget Slack _Total	3,81	9,63	7,1526	2,02914
BS before incentive (period 1–6)	1,39	4,71	3,5792	1,13747
BS after incentive (period 7–12)	2,42	4,98	3,5734	,95288
Trust_level before incentives (Subordinates)	–5,48	5,36	,0000	3,26603
Trust_level_after_incentives (Subordinates)	–5,15	3,36	,0000	2,52230
Trust_level before_incentives (Superiors)	–4,27	4,67	,0000	2,85805
Trust_level_after_incentives (Superiors)	–4,55	4,07	,0000	2,62315

**Table 1.**  
Statistic Descriptives

<b>Relationship between Budgetary Slack and Trust (Before Economic Incentive)</b>				
<b>Panel 2A: (Accumulate Budgetary Slack, Period 1–6)</b>				
	<b>Sum of quadratics</b>	<b>Quadratic Mean</b>	<b>F</b>	<b>Sig.</b>
Inter-groups	9,057	1,294	92.705	ns
Intra-groups	,000	.	.	.
Total	9,057			

  

<b>Relationship between Budgetary Slack and Trust (After Economic Incentives)</b>				
<b>Panel 2 B: (Accumulate Budgetary Slack Period 7–12)</b>				
	<b>Sum of quadratics</b>	<b>Quadratic Mean</b>	<b>F</b>	<b>Sig.</b>
Inter-groups	6,356	,908	109.644	ns
Intra-groups	,000	.	.	.
Total	6,356			

**Table 2.**  
Anova Results

Furthermore we run an inter-subject effect test. Results are shown on Table 3.

	<b>Dependent variable</b>	<b>Sum of quadratics</b>	<b>Quadratic Mean</b>	<b>F</b>	<b>Sig.</b>
Intersection	BS_accumulated_total	409,275	409,275	99,401	,000
	BS_accumulated_1_6	102,485	102,485	79,211	,000
	BS_accumulated_7_12	102,152	102,152	112,506	,000
Error	BS_accumulated_total	28,822			
	BS_accumulated_1_6	9,057			
	BS_accumulated_7_12	6,356			
Total	BS_accumulated_total	438,097			
	BS_accumulated_1_6	111,542			
	BS_accumulated_7_12	108,508			

**Table 3.**  
Inter-subject effect  
test

Overall our results show the introduction of an economic incentive has no significant effect on the relationship between trust in superiors and budgetary slack, so no support was found for a moderation effect.

## 6. Conclusions

The aim of this study is to examine the effect of interaction between budgetary slack, trust and monetary incentives. To test this relationship, we conducted an experiment, where we expected that 1) when subjects in the role of managers who express trust are encouraged economically, this kind of incentive may not

have such a decisive effect on reducing budgetary slack 2) when subjects in the role of managers who express trust are encouraged economically, this kind of incentive may decrease trust and 3) subjects in the role of managers who report distrust and are encouraged economically produce less budgetary slack than if they were not encouraged economically. However our results do not support any moderation effect of an economic incentive in the relationship between budgetary slack and trust.

Our results point out that if a subordinate trust in the superior and the superior does not trust in the manager, there is no reciprocity between both parties (Berg, 1995). In this situation, distrust and suspicion appear and they make that any incentive does no influence on budgetary slack. Thus, an introduction of a monetary incentive may reduce the level of budgetary slack when there is no trust or distrust between two parties. Because the achievement of the monetary reward may make individuals put aside distrust and suspicion and focus of getting the payment by reducing the budgetary slack.

This paper has several limitations, most of them related to the experimental research we used, such as the reduced sample size and the generalizability of our results to real world setting. Our findings overall suggest that incentive economics are indeed no relevant in evoking subordinate trust. This finding itself may complement the findings of previous studies on how trust is related to financial and non-financial performance criteria.

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