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The Impact of Compensation Schemes on Risk Attitude: A Comparison between Bangladesh and US Decision-makers

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ABSTRACT

In this study we have examined the impact of the tie between compensation schemes and performance on the degree of risk taken by corporate decision-makers. We have explored for the degree of tie, at which, decision-makers are inclined to embark upon riskier and more promising ventures but without being motivated to take an excessive amount of risk. We have further compared this subject matter between decision-makers from the two different environments of Bangladesh and the US. We have found that this risk behavior is different in the two dissimilar environments. In Bangladesh, the stronger the tie between the decision-makers' compensation schemes and their performances - the greater is their inclination to prefer riskier projects. In contrast, in the US there seems to be an optimal degree of tie between the two, somewhere in the middle. Beneath and beyond this mid-level of tie - US decision-makers are less motivated to take the riskier projects. Risk is an integral part of any business and it can act as an important deterrent or motivation for economic development. Stimulating business development requires therefore, to a great extent, willingness for risk taking by the decision-makers. However, at the same time, decision-makers have to be careful not to assume an excessive amount of risk. Overly generous compensation packages with large-sized stock option grants may have created incentives for managers to assume excessive amount of risk, contributing to the US corporate scandals of the post-dotcom era and the current global financial crisis.

The implication from this study is the recommendation to tie only partially Bangladesh executives' compensation schemes to their performances. It might enhance the country's economic development by encouraging decision-makers to take upon themselves risk, but up to a certain point, and to avoid assuming excessive amount of risk.

Keywords: Risk, Compensation Schemes, Bangladesh

INTRODUCTION

In this study we have examined the impact of the tie between compensation schemes and performance on the degree of risk taken by corporate decision-makers. We have explored for the degree of tie, at which, decision-makers are inclined to embark upon riskier and more promising ventures but without being motivated to take an excessive amount of risk. We have further compared this subject matter between decision-makers from the two different environments of Bangladesh and the US.

There are two sides to risk: the potential for loss (downside) and the opportunity for higher profit and growth (upside). Both aspects of risk are relevant when we consider evaluating business ventures. Risk is an integral part of any business and it can act as an important deterrent or motivation for economic development. Stimulating business development requires therefore, to a great extent, willingness for risk taking by the decision-makers. Typically, no one would take additional risk without being compensated for it. The relationship between compensation schemes and the degree of risk taken by corporate decision-makers has been discussed at length in the academic and practitioner literature. Recently, an article in this journal by Hagigi and Lin (2012) dealing with the Bangladesh economy, had demonstrated a significant impact of the degree to which decision-makers are compensated on their attitude towards risk.

In this current study we have further compared this issue between decision-makers from the two different environments of Bangladesh and the US. We have found that the risk behavior is different in the two dissimilar environments. In Bangladesh, the stronger the tie between the decision-makers' compensation schemes and their performances - the greater is their inclination to prefer riskier projects. In contrast, in the US there seems to be an optimal degree of tie between the two, somewhere in the middle. Beneath and beyond this mid-level of tie - US decision-makers are less motivated to take the riskier projects.

We surveyed a large sample of Bangladesh and US investors and potential investors to learn about their attitude towards risk. In the following section, we discuss the relation between the willingness to take-up risky ventures and economic development. Next, we discuss the impact of the compensation schemes on the willingness of decision-makers to take-up risky ventures. After that, we present our research methodology and proceed by presenting the empirical results and analysis. We conclude by a brief summary and recommendations.

RISKY VENTURES AND ECONOMIC DEVELOPMENT

The willingness of decision-makers to take upon themselves increased risk might enhance a country's economic development. At the same time, one has to

be careful not to exaggerate by assuming "excessive" risk. Such exaggeration contributed to the current global credit crisis. There are two sides to risk: the potential for loss (downside) and the opportunity for higher profit and growth (upside). Both the downside and the upside of risk are relevant when we consider or evaluate business ventures (Hagigi & Sivakumar, 2009). Sometimes, an investor's risk inclination might prevent him or her from taking a beneficial investment action. A decision-maker might stay away from investing in a potentially promising business venture, or wrongly select a sub-optimal investment strategy.

It is conventionally assumed that people are risk-averse; however, effective risk management does not necessarily imply a need to reduce risk. In general, for a given expected return, risky ventures are less desirable and as a result their prices are lower compared to ventures that are less risky. Hence, the expected profitability of riskier ventures is higher. It has been widely documented that there is an inverse relationship between risk and expected return. Therefore, effective risk management does not necessarily mean risk avoidance but rather suitably tailoring the risk strategy to the firm's goals and risk preference. An investor may opt to select a risky project knowing that the compensation will more than make up for that. This upside potential might lead to break-through outcomes such as important innovations and economic developments.

Meredith et al. (1982); Siropolis (1997); Hisrich and Peters (1998); Khanka (1999); and Hossain (2006), among others, have mentioned the importance of the risk-taking characteristic for an entrepreneurship and economic development in Bangladesh. Rahman (1989), on the other hand, characterized the Bangladesh entrepreneur as moderate in terms of risk-taking investment behavior. An interviewee mentioned to the authors recently that Bangladesh investors are leaning towards low risk taking ventures. This view is echoed also by Sadeq (1989) who claimed that "in Bangladesh, risks and uncertainty discourage potential entrepreneurs from undertaking highly profitable and socially desirable new ventures."

COMPENSATION SCHEMES AND ATTITUDE TOWARDS RISK

Gormley et al. (2012), among others, suggest that compensation schemes, which are tied to performance, can provide strong incentives for corporate risk-taking. They contend that in areas like sales and trading, securitization, and financial engineering, bonus pools are typically allocated based on current-period performance and this kind of bonus scheme strongly motivates corporate risk-taking.

In fact, the study by Gormley et al. (2012) implies that decision-makers might be motivated to exaggerate their risk-taking in the negative sense of risk. They find that even after market movements risk their firms, decision-makers with such compensation schemes may have little incentives to reduce their corporate risk. The same viewpoint is shared by Faulkender et al. (2010). They assert that "Overly generous compensation packages with large-sized stock option grants may have created incentives for managers to manipulate company financial statements in order to drive up stock prices contributing to the corporate scandals of the post-dotcom era and the current financial crisis" (Page 107). Cheng et al. (2010) highlight another aspect of the issue. They claim that heterogeneity of firm compensation and risk-taking attitude are not related per se, but rather reflect a sorting of investors with like preferences into these firms, or the outcome of an optimal contracting. In line with the above mentioned considerations, the objective of our empirical study is to explore whether there exists some kind of a desired mid-level (or optimal) tie between and then to compare this risk behavior between the two different environments of Bangladesh and the US.

THE EMPIRICAL STUDY

The object of this survey is twofold: First, in each country's own settings, we examine the impact of the tie between compensation schemes and performance on the degree of risk taken by corporate decision-makers. Second, we examine whether the risk attitude is of the same nature in the two different environments of Bangladesh and the US.

We designed a survey offering the choice between a "traditional" investment (the Ordinary Project) or an "innovative" one (the Risky Project). Both projects are expected to result in about the same overall rate of return. However, in most scenarios, the Risky Project is expected to result in a lower rate of return, while there is a small (and significant) probability of an exceptionally high rate of return.

We surveyed 152 investors and potential investors in Bangladesh from the following five sectors: loan-officers; university economic educators; university accounting educators; university finance educators; and, finally, from other different investors. We also surveyed 89 investors and potential investors in the US from various the business sectors. Each participant was asked to indicate a preference between the Ordinary Project and the Risky Project. This preference was matched with the investor's compensation scheme to learn about the association between the two variables.

RESULTS AND ANALYSIS

Table I deals with the Bangladesh sample. It presents the choice between an ordinary project and a risky project with upside potential. Panel A presents the distribution of preferences from the total Bangladesh sample of 152 interviews, by the variable of compensation.

Table I: Preference between Ordinary and Risky Projects in Bangladesh

Panel A: The Distribution of Preferences from the Total Sample

Project / Degree of tie to performance	Ordinary Project	Risky Project	Weight
Compensation not tied to performance	55	18	48.0%
Compensation partially tied to performance	37	24	40.1%
Compensation tied to performance	7	11	11.8%
			100.0%

Panel B: The Distribution of Preferences as Percentage of Each Level of Tie

Project / Degree of tie to performance	Ordinary Project	Risky Project	Total
Compensation not tied to performance	75.3%	24.7%	100.0%
Compensation partially tied to performance	60.7%	39.3%	100.0%
Compensation tied to performance	38.9%	61.1%	100.0%

Panel C: The Tie between Compensation and Performance Related to the Degree of Risk-taking: Results of a Logistic Regression

	Number of obs	=	152
	LR chi2(1)	=	9.13
	Prob > chi2	=	0.0025
Log likelihood = -93.722766	Pseudo R2	=	0.0464

Upside	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Compensation	0.7571764	0.2563715	2.95	0.003	0.2546975	1.259655
Constant	-1.899851	0.4749607	-4	0	-2.830757	-0.9689455

As Panel A shows, when compensation is not tied to performance, 18 out of 73 interviewees choose the risky project, while the remaining 55 interviewees choose the ordinary one. However, when the compensation is tied to performance,

more interviewees are inclined to assume more risk, as evidenced by 11 out of 18 interviewees choosing the risky project. Taken together, it shows a monotonous trend that in Bangladesh, as the degree to which the compensation of the decision-maker is tied to the performance - the preference tends to switch from the ordinary project to the risky one. This trend is clearly revealed in Panel B.

Panel B shows that, when compensation is not tied to performance, 24.7% of the survey-takers is willing to choose the risky project; when compensation is partially tied to performance, 39.3% of them indicates a preference for the risky project; and when compensation is fully tied to performance, 61.1% of them chooses the risky project over the ordinary one. Altogether, there is a clear and monotonous trend of preferring riskier ventures as the compensation schemes are tied to performance.

Panel C reports the results of a logistic regression for the Bangladesh sample. The coefficient on compensation is significantly positive (p-value = 0.003), which confirms that the above-mentioned trend is highly significant statistically.

Table II deals with the US sample. Panel A, presents the distribution of preferences from the total US sample of 89 interviews, by the variable of compensation. As Panel A shows, when compensation is not tied to performance, 11 out of 18 interviewees choose the risky project, while the remaining 7 interviewees choose the ordinary one; when the compensation is partially tied to

Table II: Preference between Ordinary and Risky Projects in the US

Panel A: The Distribution of Preferences from the Total Sample

Project / Degree of tie to performance	Ordinary Project	Risky Project	Weight
Compensation not tied to performance	7	11	20.2%
Compensation partially tied to performance	8	43	57.3%
Compensation tied to performance	8	12	22.5%
			100.0%

Panel B: The Distribution of Preferences as Percentage of Each Level of Tie

Project / Degree of tie to performance	Ordinary Project	Risky Project	Total
Compensation not tied to performance	38.9%	61.1%	100.0%
Compensation partially tied to performance	15.7%	84.3%	100.0%
Compensation tied to performance	40.0%	60.0%	100.0%

Panel C: The Tie between Compensation and Performance Related to the Degree of Risk-taking: Results of a Logistic Regression

	Number of obs	=	89
	LR chi2(1)	=	0.03
	Prob > chi2	=	0.8578
Log likelihood = -50.839006	Pseudo R2	=	0.0003

Upside	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
Compensation	-0.0664604	0.3710538	-0.18	0.858	-0.7937125	0.6607916
Constant	1.18903	0.7933912	1.5	0.134	-0.3659883	2.744048

performance, more interviewees are inclined to take the risky project, as evidenced by 43 out of 51 interviewees choosing it. However, when the compensation is tied even more to performance - only 12 out of 20 interviewees choose the risky project. Taken together, it shows that, the tie between compensation and performance has a non-linear impact on the risk-taking preference, indicating that there is an optimal degree of tie. This phenomenon is clearly revealed in Panel B.

Panel B shows that, when compensation is not tied to performance, 61.1% of survey-takers are willing to choose the risky project; when compensation is partially tied to performance, the percentage increases to 84.3%; but when compensation is fully tied to performance - the percentage decreases to 60.0%.

Panel C reports the results of a logistic regression for the US sample. As expected, the coefficient on compensation is not significant. The reason for this stems from the observation that, in the US, the tie between compensation and performance has a non-linear relation to risk taking. Until a certain point - the stronger the tie - the greater the motivation for risk-taking, and from this point and on - the stronger the tie - the weaker the motivation for risk-taking.

Table III documents the association between compensation schemes and risk-taking preference in Bangladesh, moving from one level of tie to another.

Table III: The Association between Compensation and Risk-taking in Bangladesh

Panel A: When Moving from a Lower Level to a Mid Level

Compensation	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Lower Level	73	0.2465753	0.0507959	0.4340002	0.1453156	0.3478351
Mid Level	61	0.3934426	0.0630668	0.4925677	0.2672902	0.5195951
Combined	134	0.3134328	0.0402242	0.4656293	0.2338708	0.3929948
Difference		-0.1468673	0.0800644		-0.3052425	0.0115079

diff = mean(Lower Level) - mean(Mid Level) t = -1.8344
Ho: diff = 0 degrees of freedom = 132

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0344 Pr(|T| > |t|) = 0.0689 Pr(T > t) = 0.9656

Panel B: When Moving from a Mid Level to a High Level

Compensation	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Mid Level	61	0.3934426	0.0630668	0.4925677	0.2672902	0.5195951
High Level	18	0.6111111	0.1182356	0.5016313	0.3616557	0.8605665
Combined	79	0.443038	0.0562453	0.4999189	0.3310623	0.5550137
Difference		-0.2176685	0.1326635		-0.4818354	0.0464984

diff = mean(Mid Level) - mean(High Level) t = -1.6408
Ho: diff = 0 degrees of freedom = 77

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0525 Pr(|T| > |t|) = 0.1049 Pr(T > t) = 0.9475

Panel A indicates that, when moving from a lower degree of tie to a mid degree - higher percentage of interviewees is inclined to take the risky project. This result is significant, as evidenced by the p-value of 0.0344. Panel B reports that, when moving from a mid level to a high level - the percentage increases again. This result is also significant as evidenced by the p-value of 0.0525. Hence, Table III reveals a monotonous trend in Bangladesh that, as the degree to which the compensation of the decision-maker is tied to the performance is stronger - the preference tends to switch from the ordinary project to the risky one.

Table IV documents the association between compensation schemes and risk-taking preference in the US, moving from one level of tie to another.

Table IV: The Association between Compensation and Risk-taking in US

Panel A: When Moving from a Lower Level to a Mid Level

Compensation	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Lower Level	18	0.6111111	0.1182356	0.5016313	0.3616557	0.8605665
Mid Level	51	0.8431373	0.0514309	0.36729	0.7398353	0.9464392
Combined	69	0.7826087	0.0500195	0.4154928	0.6827964	0.882421
Difference		-0.2320261	0.1112022		-0.4539866	-0.0100657

diff = mean(Lower Level) - mean(Mid Level) t = -2.0865
Ho: diff = 0 degrees of freedom = 67

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.0204 Pr(|T| > |t|) = 0.0407 Pr(T > t) = 0.9796

Panel B: When Moving from a Mid Level to a High Level

Compensation	Obs	Mean	Std. Err.	Std. Dev.	[95% Conf.	Interval]
Mid Level	51	0.8431373	0.0514309	0.36729	0.7398353	0.9464392
High Level	20	0.6	0.1123903	0.5026247	0.3647644	0.8352356
Combined	71	0.7746479	0.0499383	0.4207878	0.675049	0.8742467
Difference		0.2431373	0.1079204		0.027842	0.4584325

diff = mean(Mid Level) - mean(High Level) t = 2.2529
Ho: diff = 0 degrees of freedom = 69

Ha: diff < 0 Ha: diff != 0 Ha: diff > 0
Pr(T < t) = 0.9863 Pr(|T| > |t|) = 0.0274 Pr(T > t) = 0.0137

Panel A reports that, when moving from a lower degree to a mid degree, higher percentage of interviewees is inclined to take the risky project. This result is significant, as evidenced by the p-value of 0.0204. Panel B reports that, when moving from a mid level to a high level, the percentage decreases. This result is also significant as evidenced by the p-value of 0.0137. Hence, Table III indicates that, in the US, there may be a mid level optimal tie at which decision-makers are more inclined to embark upon risky and promising ventures, without being motivated to assume excessive amount of risk.

Table V reports the association between compensation schemes and risk-taking preferences by comparing the Bangladesh and US samples.

Table V: The Association between Compensation Schemes and Risk-taking between Bangladesh and the US Samples: Results of a Logistic Regression

Panel A: When Moving from a Lower Level to a Mid Level

	Number of obs	=	203
	LR chi2(3)	=	49.13
	Prob > chi2	=	0
Log likelihood = -115.84402	Pseudo R2	=	0.175

Inclination to Take Risk	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
The US Effect	1.229773	0.6180793	1.99	0.047	0.0183602	2.441187
Incremental Bangladesh Effect	-0.5456761	0.7241914	-0.75	0.451	-1.965065	0.8737129
Country Indicator	-1.02327	1.202898	-0.85	0.395	-3.380907	1.334367
Constant	-0.7777883	1.040827	-0.75	0.455	-2.817772	1.262195

Panel B: When Moving from a Mid Level to a High Level

	Number of obs	=	150
	LR chi2(3)	=	24.84
	Prob > chi2	=	0
Log likelihood = -88.530727	Pseudo R2	=	0.123

Inclination to Take Risk	Coef.	Std. Err.	z	P>z	[95% Conf.	Interval]
The US Effect	-1.276293	0.5971509	-2.14	0.033	-2.446688	-0.1058993
Incremental Bangladesh Effect	2.161143	0.8118184	2.66	0.008	0.5700079	3.752277
Country Indicator	-6.436908	1.928975	-3.34	0.001	-10.21763	-2.656187
Constant	4.234346	1.472289	2.88	0.004	1.348712	7.119979

Panel A documents that, when moving from a lower degree to a mid degree, higher percentage of interviewees is inclined to take the risky project. This phenomenon is statistically significant in both countries, as evidenced the by the p-value of 0.047. The incremental country effect (Bangladesh) is not significant (p-value of 0.047).

Panel B documents that, when moving from a mid level to a high level, in the US sample, lower percentage of interviewees prefers the risky project, as evidenced by the significantly negative coefficient on the US effect (p-value = 0.033). However, this is not the case with Bangladesh. When moving from a mid level to a high level, the percentage increases, as evidenced by the significantly positive coefficient on the incremental Bangladesh effect (p-value = 0.008). These findings reinforce the evidence related to the difference in risk behavior between the two countries.

SUMMARY AND CONCLUSIONS

In this study we have examined the impact of the tie between compensation schemes and performance on the degree of risk taken by corporate decision-makers. We have explored for the degree of tie, at which, decision-makers are inclined to embark upon riskier and more promising ventures but without being motivated to take an excessive amount of risk. We have further compared this subject matter between decision-makers from the two different environments of Bangladesh and the US. We have found that the risk behavior is different in these two environments. In Bangladesh, the stronger the tie between the decision-makers' compensation schemes and their performances - the greater is their inclination to prefer riskier projects. In contrast, in the US there seems to be an optimal degree of tie between the two, somewhere in the middle. Beneath and beyond this mid-level of tie - US decision-makers are less motivated to take the riskier projects.

Risk is an integral part of any business and it can act as an important deterrent or motivation for economic development. Stimulating business development requires therefore, to a great extent, willingness for risk taking by the decision-makers. However, at the same time, decision-makers have to be careful not to assume an excessive amount of risk. Overly generous compensation packages with large-sized stock option grants may have created incentives for managers to assume excessive amount of risk, contributing to the US corporate scandals of the post-dotcom era and the current global financial crisis. Perhaps the US decision-makers learned their lesson from the recent financial crisis and, therefore, they are careful not to assume an excessive amount of risk.

The implication from this study is the recommendation to tie only partially Bangladesh executives' compensation schemes to their performances. This tie might enhance the country's economic development by encouraging decision-makers to take upon themselves risk, but up to a certain point, and to avoid assuming excessive risk. Striving to get towards the optimal tie between compensation schemes and performance might help avoid a financial crisis similar to the one that had started in the US and spread globally. This US financial crisis might have contributed to the creation of such an optimal tie as an attempt to avoid a repetition of the same irresponsible risk behavior of many US executives. One can learn from the mistakes, which prevailed in the US in the past, to enhance the economic development of Bangladesh in the future.

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