View metadata, citation and similar papers at core.ac.uk

brought to you by CORE

provided by Open Research Exeter

Three Essays on Incentive Design

Submitted by Jordan James Large, to the University of Exeter as a thesis for the degree of Doctor of Philosophy in Economics, April 2013.

This thesis is available for Library use on the understanding that it is copyright material and that no quotation from the thesis may be published without proper acknowledgement.

I certify that all material in this thesis which is not my own work has been identified and that no material has previously been submitted and approved for the award of a degree by this or any other University.

Signature:.....

ACKNOWLEDGEMENTS

First and foremost I would like to thank my supervisor, Doctor Surajeet Chakravarty. Without his guidance and persistent help this thesis would not have been possible. I would also like to thank both Professor Tigran Melkonyan and Professor Robin Mason for their useful discussions that helped shape the workings of two of the chapters to follow. I am indebted to the ESRC for providing the financial support necessary to pursue this venture. I also offer sincere gratitude to my colleagues and seminar participants at the University of Exeter Business School whose insight and criticism was utterly invaluable. Finally, it gives me great pleasure in acknowledging the help of my loving family and friends. In particular Agathe, whose support and patience gave me the strength when I needed it most.

Three Essays on Incentive Design

Abstract

We present three distinct works on the subject of incentive design. The first focuses on a fundamental aspect of all principal-agent models, the participation constraint. We endogenise the constraint, allowing the agent to influence his outside option, albeit at some detriment to the project he is contracted to work upon. We compare the optimal contract to the literature on the supposed trade-off between risk and incentives. We find support for the Prendergast (2002) observation of a positive relationship between the two variables and offer an explanation through the use of said influence activities. The second contribution introduces another principal-agent framework for models with both adverse selection and moral hazard, with the novel inclusion of limited liability. Described in a target-setting environment, the findings are related to and support the use of tenure contracts in academia. This is justified by the fact that pooling equilibria maximise the value to the principal and fully separating equilibria are implemented with non-monotonic wage structures. Finally, in opposition to conventional literature, those of low type make rent gains over and above their reservation utility, while the high types break even. The final chapter studies organisational design and allocation of control. We offer conditions whereby firms would wish to integrate, or profit-share, with another, given varying degrees of control allocation. We show that integration comes at a lower cost for the decision-making firm when control is contractible as opposed to transferable. Also we show that the level of incompatibility between firms, unrelated to financial gain, can affect the integration decision.

Contents

1 Introduction and Literature **5**

2 Influence Activities and the Outside Option **14**

2.1 Introduction 14

2.2 Risk and Incentives Trade-Off in the Literature 17

2.3 Model 20

2.4 Risk And Incentives 27

2.5 Conclusion 31

3 Target Setting with Moral Hazard and Adverse Selection **32**

3.1 Introduction 32

3.2 Discussion and Relation to Literature 36

3.3 Model 38

3.4 Solution 44

3.4.1 What Constraints Should be Binding? 46

Binding Constraints - Case 1 46

Binding Constraints - Case 2 47

Binding Constraints - Case 3 48

Binding Constraints - Case 4 48

3.4.2 Simulation and Findings 49

3.4.3 Results . . . 53
Results - Case 1 . . . 55
Results - Case 2 . . . 57
Results - Case 3 . . . 59
Results - Case 4 . . . 60
3.5 Discussion . . . 61
3.6 Conclusion . . . 63

4 Control and Integration **64**
4.1 Introduction . . . 64
Why do some mergers fail? . . . 65
Who has control? . . . 67
4.2 Literature . . . 70
4.3 Model . . . 73
4.4 Solution and Discussion . . . 77
4.5 Conclusion . . . 80

5 Concluding Remarks **81**

Appendices **87**
Appendix A . . . 87
Appendix B . . . 93
Results - Case 1 . . . 104
Results - Case 2 . . . 106
Results - Case 3 . . . 108
Results - Case 4 . . . 110
Will agents lie about their type? . . . 113
Appendix C . . . 117

List of Figures **130**

Bibliography **131**