JUSSI KIVISTÖ

Agency Theory as a Framework for the Government-University Relationship

ACADEMIC DISSERTATION
To be presented, with the permission of the Faculty of Economics and Administration of the University of Tampere, for public discussion in the Pinni B1100 Auditorium, Kanslerinrinne 1, Tampere, on June 1st, 2007, at 12 o’clock.

UNIVERSITY OF TAMPERE
JUSSI KIVISTÖ

Agency Theory
as a Framework for the
Government-University Relationship
ACKNOWLEDGEMENTS

This research is an outcome of five-year mixture of bitter agony and sweet joy. Now it is time to give thanks to all those who have contributed to this mixture.

First and foremost, I want to express my gratitude to my supervisors Professor Seppo Höltä and Research Director, Dr. Timo Aarrevaara. Seppo has been more than just a supervisor from the very beginning of this research process. It was he who recruited me to do this research, and he has kept his faith in me and in my work. He helped me every time I needed help, and knew when not to interfere. Therefore, Seppo’s supervision is an expression of great situational sensitivity and knowledge of human nature. The same applies to Timo, whose constant optimism cannot be bypassed without being affected by it. Academically, Timo’s unique insight influenced greatly some of the most central choices of this research.

I also want to thank my two reviewers, Professor Emeritus Robert O. Berdahl (University of Maryland) and Professor, Rector Emeritus Kyösti Pulliainen (University of Joensuu) for their valuable comments and criticism. As a junior member of the academic community, I am more than honored to have these two experienced emeritus professors to oversee the final stage of this work.

I want to thank all the people who have read, commented and criticized my texts during the different phases of the research. Especially, I want to thank Professor Jim Fairweather, Special Advisor Matti Jussila, Professor Pentti Meklin, and Professor Jarmo Vakkuri for their valuable comments. I am also indebted to my research colleagues, Yuzhuo Cai, Vuokko Kohtamäki, Kari Kuoppala, Anu Lyytinen, and Terhi Nokkala, with whom I have shared an office, printers, and discussions. Without their help and empathy, this process would have been harder, both personally and professionally. I also want to give thanks to all the colleagues and coordinators of our FINHERT-graduate school network at the University of Jyväskylä and at the University of Turku.

Many people from the Ministry of Education have contributed the empirical part of this research. Specifically, I wish to thank Counsellor Jari Jokinen (Finland’s Permanent Representation in the EU), Counsellor
of Education Jorma Karhu, Senior Advisor Petteri Kauppinen, Senior Advisor Marja Kyläma, Director Anita Lehikoinen, Chief Planning Officer Marja Pulkkinen (Science and Technology Policy Council), and Counsellor of Education Ari Saarinen. Without their important and patient co-operation and assistance, this research could not have been conducted.

I am grateful to Dr. Ian Dobson and M.A. Tea Jansson, who have patiently corrected and edited the English language of this research. As a native speaker, journal editor, and expert of higher education field, Ian also contributed this research academically.

I also want to thank two people, who have had significant effect on my choice to stay and work at the university: Professor Risto Harisalo and Amanuensis Merja Huusko. Risto’s enthusiastic attitude towards academic work, his ideas, and his approachable and open-minded character, have inspired me and still continue to do so. During the time of my master’s studies, it was originally Risto’s suggestion that I and my colleague and friend, Researcher Jani Rajaniemi should consider graduate studies. Merja’s encouragement and caring during my time as a trainee and research assistant at our department helped me to settle in the researcher’s role.

I would like to thank the most important people in my life, my family. My mother Pirjo, my father Mikko, my mother-in-law Eija and my father-in-law Matti have provided firm support during all phases of this study. Without their encouragement and emotional, material, and spiritual support, this research would have not been finished. Anu, my wife and my best friend, supported me through the most difficult phases of this work. She always wanted to hear and discuss my research after my long days (usually more willingly than I did), and she made endless sacrifices by taking care of our two daughters, Enni and Silja, while I was at work. I never heard her complain. Anu, you must be a Saint.


Tampere, April 2007

Jussi Kivistö
ABSTRACT

The aim of the present research was to utilize agency theory as a theoretical framework for the examination of the government-university relationship in order to discover the insights agency theory can offer, and the main strengths and weaknesses of agency theory in the context of government-university relationships.

This research discovered the existence of informational asymmetries and goal conflicts in government-university relationships and that they create favorable conditions for the appearance of agency problems. Examining these problems enabled conceptualizing different forms of opportunistic behavior of universities and the description and analysis of government’s governance mechanisms. The concepts of agency costs and agency variables were introduced for the examination of government-university relationship. Agency variables were found to offer insights for analyzing the conditions connected to the government-university relationship and the impact of these conditions in the use of government’s governance mechanisms. Agency costs help determine the total costs resulting from governing universities and the costs incurred because of the opportunistic behavior of the universities. Due to its covert nature, it was impossible to fully prove the existence of opportunistic behavior empirically. Similarly, calculating agency costs in empirical context was found to be very difficult.

It was found that, with its logically consistent framework, agency theory is able to manifest many of the complexities and difficulties that government faces when it attempts to govern universities. Agency theory was found to offer unique explanations for the government’s choice and use of certain governance procedures, low performance of universities and cost growth in higher education sector.

Agency theory was also found to have several weaknesses. The theory relies much on narrow assumptions of human nature and motivation, and it partly fails to distinguish other factors than opportunistic behavior as the cause for poor performance of universities. It was discovered that agency theory examines government-university relationships without questioning the legitimacy and the sensibility of government goals. Further, agency theory is not able to capture the wide variety of non-eco-
nomic aspects inherent in government-university relationships and it cannot incorporate multiple principals in its framework.

Keywords: agency theory, government-university relationship, opportunistic behavior, efficiency
TIIVISTELMÄ

Tutkimuksen tavoitteena oli hyödyntää agenttiteoriaa teoreettisena viitekehyksenä valtio-yliopistosuhteen tarkastelussa. Tutkimuksessa selvitettiin, mitä näkökulmia agenttiteoria voi tarjota valtio-yliopistosuhteen tarkasteluun ja mitkä ovat teorian vahvuudet ja heikkoudet valtio-yliopistosuhteen tarkastelun kontekstissa.


Tutkimuksen perusteella voidaan todeta, että agenttiteoria on logistyistä johdonmukainen viitekehys, jonka avulla pystytään hahmottamaan useita yliopistojen valtionohjausmenetelmien kompleksisuuteen ja vaikeuteen liittyviä seikkoja. Agenttiteoria voidaan selittää ainutlaatuisella tavalla valtion valtion- ja valtionhojusmenetelmien valintaa ja käyttöä, yliopistojen alhaista suoritusasua sekä korkeakoulusektorin kustannusten kasvua.

Agenttiteoria voidaan olevan myös heikkouksia. Agenttiteorian peruskoetta voidaan rakentaa kapealle käsitykselle ihmisluonnosta ja motivaatiosta, eikä teoria pysty tunnistamaan opportunistisen käyttäytymisen lisäksi kaikkia muita syitä yliopistojen heikolle suoritusasolle. Teorian heikkoukset voidaan pitää myös sitä, että se tutkii valtio-yliopistosuhdetta kyseenalaistamatta valtion yliopistoiille asettamien päär-
määrien oikeutusta ja mielekkyyttä. Teoria ei myöskään pysty huomioimaan taloudellisten näkökulmien lisäksi useita muita valtio-yliopistosuhteelle ominaisia aspekteja, eikä se pysty sisällyttämään useiden päämiesten olemassaoloa viitekehykseensä.

Avainsanat: agenttiteoria, valtio-yliopistosuhde, opportunistinen käyttäytyminen, tehokkuus
CONTENTS

ACKNOWLEDGEMENTS v
ABSTRACT vii
TIIVISTELMÄ ix
LIST OF FIGURES AND TABLES xiv

1 INTRODUCTION 1
1.1 Background to the research 1
1.2 Research objective and research questions 4
1.3 Structure of the research 6

2 OVERVIEW OF AGENCY THEORY 8
2.1 Disciplinary origins of agency theory 8
2.2 Agency relationships 11
  2.2.1 Types of agency relationship 12
  2.2.2 Levels of agency relationship 13
  2.2.3 Assumptions about agency relationship 15
2.3 Agency problems 18
  2.3.1 The problem of adverse selection 19
  2.3.2 The problem of moral hazard 22
  2.3.3 Agency costs and agency variables 24
2.4 Previous research applications of agency theory 28
  2.4.1 Theory testing studies 29
  2.4.2 Theory development studies 32
  2.4.3 Studies utilizing agency theory as a heuristic framework 33
  2.4.4 Studies in the field of higher education 37
2.5 Contributions and criticism of agency theory 41
  2.5.1 General contributions of agency theory 41
  2.5.2 Criticism of the behavioral assumptions 42
  2.5.3 Criticism of the theoretical capacity 45
  2.5.4 Criticism of non-profit and public sector applications 48
2.6 Discussion on the insights offered by the theory 50
### 3 GOVERNMENT-UNIVERSITY RELATIONSHIPS AS AGENCY RELATIONSHIPS: THEORETICAL INSIGHTS

3.1 Definitions and basic assumptions 53
3.2 Informational asymmetries 56
  3.2.1 Informational asymmetries resulting from work 57
  3.2.2 Informational asymmetries resulting from organizational complexity 59
  3.2.3 Informational asymmetries resulting from complex production technology 64
3.3 Goal conflicts 67
  3.3.1 Conflicts in official goals 68
  3.3.2 Conflicts in operative goals 76
3.4 The problem of adverse selection 78
3.5 The problem of moral hazard 82
  3.5.1 Shirking 83
  3.5.2 Opportunistic pursuit of prestige and revenues 88
  3.5.3 Opportunistic cross-subsidization 95
  3.5.4 The distortion of monitoring information 98
  3.5.5 The effects of moral hazard opportunism 101
3.6 Governing the problem of moral hazard 102
  3.6.1 Behavior-based governance 103
  3.6.2 Output-based governance 106
  3.6.3 Agency variables 110
  3.6.4 Summary of agency variables 123
  3.6.5 Agency costs 126
3.7 Discussion on the theoretical insights offered by the theory 127

### 4 GOVERNMENT-UNIVERSITY RELATIONSHIPS AS AGENCY RELATIONSHIPS: EMPIRICAL INSIGHTS

4.1 Case study as a research design for empirical analysis 130
  4.1.1 Case study research design in empirical analysis 131
  4.1.2 Reliability and validity 134
4.2 Agency relationship 136
  4.2.1 Case description 136
  4.2.2 Case analysis 138
4.3 The problem of adverse selection 141
  4.3.1 Case description 141
  4.3.2 Case analysis 145
4.4 The problem of moral hazard
   4.4.1 Case description: Program governance
   4.4.2 Case analysis: Program governance
   4.4.3 Case description: Program results
   4.4.4 Case analysis: Program results
4.5 Discussion on the empirical insights offered by the theory

5 AGENCY THEORY AS A FRAMEWORK FOR ANALYZING GOVERNMENT-UNIVERSITY RELATIONSHIPS: STRENGTHS AND WEAKNESSES OF THE THEORY
   5.1 On theories and their evaluation
   5.2 The strengths of agency theory
   5.3 The weaknesses of agency theory
   5.4 Discussion of the strengths and weaknesses of the theory

6 CONCLUSIONS
   6.1 Insights, strengths and weaknesses of agency theory
   6.2 Limitations of the study and implications for further research

REFERENCES
LIST OF FIGURES AND TABLES

Figure 1. Structure of the research .................................................................6
Table 1. Agency variables and their effects on contract choice ..................27
Table 2. Selected studies applying agency theory as a framework ..............34
Table 3. The choice of governance methods and agency variables.............125
Table 4. Direct funding of Information Industry Program in 1998-2005 .........138
Table 5. Funded enrollment increases under the Information Industry Program in 1998-2003 .......................................................................................142
Table 6. Performance assessment criteria of graduate schools..................143
Table 7. Additional graduate school places under the Information Industry Program in 1999 and 2002..............................................................144
Table 8. Monitoring information concerning the operation plans of applying graduate schools.........................................................................................147
Table 9. Monitoring information about the performance of existing graduate schools..................................................................................................149
Table 10. Monitoring information on the performance of professional up-grading programs and undergraduate programs from 2000 to 2004...........155
Table 11. Categorization of the MoE’s governance methods used in the implementation of the Information Industry Program..................................156
Table 12. The choice of governance methods and agency variables............162
Table 13. Performance results of professional upgrading programs in 2004/5........164
Table 14. Funded and total enrollment of undergraduate programs in 1998-2004.....165
Table 15. Development of the number of undergraduate degrees in seven universities in years 2003 and 2004...............................................................167
1 INTRODUCTION

Knowledge is one thing, virtue is another. . . . Quarry the granite rock with razors, or moor the vessel with a thread of silk; then may you hope with such keen and delicate instruments as human knowledge and human reason to contend against those giants, the passion and the pride of man.


1.1 Background to the research

Government-university relationships have gone through a period of transition over the last fifteen years, especially in Europe. The predominant mode for government governance of universities has seemingly shifted from control and regulation to supervision and enforcement of the self-regulative capabilities of the universities (e.g. Hölttä, 1995; van Vught, 1997). More specifically, these changes have been characterized by delegation and a shift from hierarchical, authority-based governance structures to contractual, exchange-based governance structures.

Increased autonomy and self-regulative capabilities of universities have been accompanied by increases in their accountability to governments (e.g. Trow, 1996; Gornitzka et al., 2004). Indeed, accountability, understood as “the obligation to report to others, to explain, to justify, to answer questions about how resources have been used, and to what effect” (Trow, 1996, p. 310), has been at the center of the higher education policy agenda in many higher education systems (Huisman & Currie, 2004, p. 529). The motivations and purposes that lie behind a growing worldwide governmental interest in assuring accountability are undoubtedly complex and diverse. However, much of the increased interest appears to result from doubts about the efficient allocation of resources and effective cost containment; from the lack of trust and confidence between government and university officials; from suspicions about the accuracy and relevance of the data provided by universities; and from the lack of confidence in the traditional decentralized, loosely coupled, institutional governance processes that are common
within organizations primarily comprised of professional employees (cf. Schmidtlein, 2004, p. 264).

Given this type of development, one needs to ask two simple interconnected questions: First, why do governments need to verify the accountability of universities? Second, why governments cannot just trust universities? Although these questions are simple, finding answers for them can be difficult. Of course, one could easily argue that accountability is required in order to secure economic, efficient, and effective use of government resources, and that trust is not enough to verify the accountability. This is precisely true, but it does not really answer the questions presented. Indeed, discussion of economy, efficiency and effectiveness is only discussion of the ‘symptoms’ that trigger the claims for accountability, not the cause, the ‘sickness’ that is the origin of the symptoms.

As a theory characterized by mistrust, control, and compliance, agency theory is able to propose a rather simple and straightforward answer for the questions presented. According to agency theory, governments do not – and in fact they should not – trust universities, simply because universities are likely to behave opportunistically if they are not held accountable for the resources they receive. This answer is in many ways brutal, and it is likely to raise serious disquiet, especially inside universities. Nevertheless, it would seem to be the logical answer in many ways to the questions presented. This is precisely what some of the higher education scholars have suggested by arguing that “an accountability is a constraint on arbitrary power, and on the corruptions of power, including fraud, manipulation, malfeasance and the like” (Trow, 1996, p. 311).

What is agency theory? In its most simple form of definition, agency theory (a.k.a. the principal-agent theory / model) describes the relationship between two or more parties, in which one party, designated as the principal, engages another party, designated as the agent, to perform some task on the behalf of the principal (e.g. Ross, 1973, p. 134; Moe, 1984, p. 756). Agency relationships exist in a variety of social contexts involving the delegation of authority. Common examples of agency relationships include relationships such as employer-employee, patient-doctor, landlord-tenant, and citizen-politician relationships. Agency theory is concerned with analyzing and resolving problems that can occur in agency relationships. The theory assumes that once principals delegate authority to agents, they often have problems controlling them,
because agents’ goals often differ from theirs, and because agents often have better information about their capacity and activities than do principals. Agency theory focuses on the ways principals try to mitigate this control problem by selecting certain types of agents and certain forms of monitoring their actions, and by using economic incentives. (cf. Kiser, 1999, p. 146.)

Although strongly influenced by its background in economics, agency theory is not and it never has been the exclusive property of one particular scholarly discipline or paradigm. Rather, it has a widely applied theoretical and empirical framework for many different disciplines and approaches. The fact that agency theory has been used for example by scholars in accounting (e.g. Bohren, 1998; Lambert, 2001), marketing (e.g. Bergen et al., 1992), political science (e.g. Moe, 1984; Koelble, 1996), public administration and public management (e.g. Laffin, 1997; Ferris & Graddy, 1998), public economics (e.g. de Groot, 1988; Khalil & Lawaree, 2001), organization and management studies (e.g. Noorderhaven, 1992; Nilikant & Rao, 1994; Shaw, Gupta & Delery, 2000), applied psychology (Kirby & Davis, 1998) and sociology (e.g. Petersen, 1993; Kiser, 1999) provides evidence of the intellectual diffusion and the generic nature of the theory. In Finland, agency theory still remains relatively unutilized and it has not generated much scholarly interest. Still, a few exceptions can be found; the framework of agency theory has been introduced at least to the fields of political science (Wiberg & Salonen, 1991), local government studies (Oulasvirta, 1994; Möttönen, 2002, Meklin, 2000; 2002; Valkama, 2004), economics and corporate management (Kanniainen, 1996), history (Ojala, 1997) and accounting (Nikkinen & Sahlström, 2004).

During the 1980s and 1990s, the role of agency theory was more or less nominal in the mainstream of higher education research. Authors such as e.g. Ferris (1991, p. 9), Lehtimäki (1993, pp. 40-43), Whynes (1993, p. 436); Hölttä (1995, p. 55), Williams (1995, pp. 174-176; 1997, pp. 277-278), Massy (1996, pp. 75-76), and Geuna (1999, p. 17) all acknowledged the principal-agent setting but deeper examination of this relationship as an agency relationship was left aside. However, in addition to the works of Kivistö (2005a; 2005b), a growing number of attempts to apply agency theory within the context of higher education have been made especially in recent years. Scholars such as McLendon (2003), Liefner (2003), Gornitzka et al. (2004) and Lane (2005) have applied the theory within a higher education context and to government-university rela-
tionships. All these studies have understood and utilized the theory as an analytical framework, heuristic device, or in a way which can be characterized as a lens that shapes what is looked at and the questions asked (Creswell, 2003, p. 119). As a part of their analysis, these scholars have been able to discuss topical issues like e.g. the effects of a government’s governance procedures on university behavior, the selection of funding mechanisms, the purpose of quality evaluation, and the complex relationship between accountability and trust.¹

1.2 Research objective and research questions

The increased scholarly interest in viewing the government-university relationship in the light of agency theory has opened a new avenue for understanding issues related to government control and university accountability. However, it seems that the previous research has not been conclusive. On the basis of the fragmented nature of the studies which have been conducted, it is very difficult to form a picture about the insights and understanding agency theory could provide with respect to the government-university relationship. It seems that a substantial part of the dynamics of agency theory has not yet been described thoroughly. Little attention has been focused on defining and operationalizing some of the most important concepts of agency theory in the context of government-university relationships, and the systematic discussion about the strengths and weaknesses of the utilization of the theory in this context has been missing.

Despite the recent growth of scholarly interest in the theory, and despite the valuable contribution in introducing the theory to the field of higher education, it seems that the possibilities for utilizing agency theory as a framework for examining government-university relationships has not yet been sufficiently examined. Therefore, the research objective of this study is to utilize agency theory as a theoretical framework for the examination of the government-university relationship. Within the limits of this research objective, the following two research questions are to be answered:

¹ A more detailed review of these studies will be presented in section 2.4.4.
1. What insights can agency theory offer when it is utilized as an analytical framework for examining the theoretical and empirical dimensions of the government-university relationship?

2. What are the main strengths and weaknesses of agency theory when it is utilized as an analytical framework for examining the theoretical and empirical dimensions of the government-university relationship?

Answering the first research question determines the substance of the theoretical and empirical insights agency theory can evoke, as well as highlighting the overall power of the theory to evoke new and unexpected insights that are different from those revealed by common sense or illuminated by other theoretical approaches (cf. Harmon & Mayer, 1986, p. 61). Answering this research question requires that the concepts of agency theory are given both theoretical and operational definitions in the context of government-university relationship. The purpose of the theoretical definition is to give exact meaning to the terms and concepts used in agency theory. The operational definition shows how well the concepts of agency theory are linked to theoretical and empirical contexts of government-university relationships.

Answering the second research question provides an assessment of the capacity of agency theory to provide the insights. Applying an old theory to a relatively new context and showing that it provides certain kinds of insights would not be very instructive by itself. Therefore, in order to discover the true value of the theory in this context, strengths and weaknesses of agency theory in the context of government-university relationships need also to be evaluated.

Given the research objective and research questions which have been presented, agency theory has a dual role in this study: it functions simultaneously as a research instrument and as a research object. As a research instrument, agency theory will be used to examine the theoretical and empirical dimensions of government-university relationships from the perspective of agency theory. As a research object, the strengths

---

2 By using agency theory as a research instrument, the setting for this study approaches what is known in sociology as ‘metatheorizing’ (Ritzer, 1988; 1990). One of the aims of metatheorizing is to turn to other academic disciplines to look for ideas, tools, concepts, and theories that can be used in the analysis and development of the research subject (cf. Ritzer, 1988; p. 192; 1990, p. 5).
and weaknesses of agency theory itself are evaluated in the context of
government-university relationships.

1.3 Structure of the research

This study has been organized into six chapters (see Figure 1). This intro-
ductive chapter is followed by the second chapter, which presents an
overview of agency theory and thereby lays a framework for the analy-
sis conducted in the subsequent chapters. In Chapter 2, the disciplin-
ary origins of the theory are discussed and its central concepts are de-
defined. The chapter also includes a section in which the previous research
applications of agency theory are reviewed, and where the central con-
tributions and criticism of the theory are discussed. A comprehensive
overview of agency theory is needed for two reasons. First, because sys-
tematic application of agency theory to government-university relations-
ships requires the determination of what the theory actually contains,
where it has come from and how it has been used before. Second, pro-

Figure 1. Structure of the research

6
providing a comprehensive, interdisciplinary and systematic overview is also important because none of the previous studies have been able to provide such. Previous overviews of the theory have been limited to the perspective of some particular discipline or research topic.

In Chapter 3, the concepts defined in Chapter 2 will be operationalized to the theoretical context of government university relationships. This context includes elements which are drawn from the wider body of theoretical work related to higher education organizations. Concepts to be focused on include agency relationships, informational asymmetries, goal conflicts, agency problems, and the governance of the agency problems. In Chapter 4, the concepts derived from Chapter 2 and operationalized in Chapter 3 are operationalized in an empirical context with an empirical case study.

At the beginning of Chapter 5, theories in general and the criteria for their evaluation are discussed. Following this discussion, agency theory’s strengths and weaknesses are evaluated on the basis of the discussion and analysis of the preceding three chapters. Chapter 6 completes the study by presenting its main findings, drawing conclusions, and discussing the limitations of the study. Implications for further research topics and questions are also discussed.

As a whole, the structural design of this study is guided by the two research questions. The analysis conducted in the Chapters 2-4 provides the answer to research question 1 and Chapter 5 provides the answer to research question 2. Since the third chapter uses the discussion and analysis presented in Chapter 2, and Chapter 4 uses the discussion and analysis from Chapters 2 and 3, the outline of the Chapters 2-4 has been kept as uniform as possible in order to achieve greater clarity and precision in analysis.
2 OVERVIEW OF AGENCY THEORY

2.1 Disciplinary origins of agency theory

The disciplinary origins of agency theory come from economics, more specifically information economics (Eisenhardt, 1989, p. 59). According to Moe (1984, p. 756), agency theory was initially developed to investigate more general questions of incomplete information and risk sharing. The works of Spence and Zeckhauser (1971), Ross (1973), and Arrow (1971), who are usually mentioned as the originators of agency theory, have been discussed by other authors (see Jensen, 1983, p. 334; Moe, 1984, p. 756; Eisenhardt, 1989, p. 58). The work of Alchian and Demsetz (1972), which focused on property rights and addressed issues concerning contracts, shirking and monitoring of team production, has also been influential in the development of agency theory (see Jensen & Meckling, 1976; Fama, 1980).

Since its birth, the development of mainstream agency theoretical research has developed along two lines, which are usually referred to as the “positive theory of agency” (a.k.a. “positivist stream”) and “principal-agent” (Jensen, 1983, p. 334; Eisenhardt, 1989, p. 59; Douma & Schreuder, 2002, pp. 109-110). The works of e.g. Ross (1973), Harris & Raviv (1978), Shavell (1979) and Holmström (1979) can be considered as early representatives of principal-agent literature. The work of Jensen & Meckling (1976), and the works of Fama (1980), and Fama and Jensen (1983) were examples of the emerging positive (or “positivist”) stream (cf. Jensen, 1983, pp. 334-335).

The two streams share a common unit of analysis, that is, the contract between the principal and the agent, and some of the common assumptions of agency theory. Jensen (1983, p. 334) argues that “[b]oth literatures address the contracting problem between self-interested maximizing parties and both use the same agency cost minimizing tautology (although not necessarily stated in that form)”. According to Eisenhardt (1989, p. 59), the two streams “share common assumptions about people, organizations, and information”. Despite their common assumptions and interests, the streams also differ in many respects. The principal-agent literature is generally more abstract, mathematical and non-empirically oriented. Principal-agent researchers are concerned
about the general theory of the principal-agent relationship, a theory that can be applied to lawyer-client, landlord-tenant, and employer-employee and other agency relationships. Characteristic of formal theories, the principal-agent stream involves the careful specification of assumptions, which are followed by logical deduction and mathematical proof. The main focus is in determining which form of the contract is the optimal one (Jensen, 1983, p. 334; Eisenhardt, 1989, p. 60). The other stream, the positivist literature, is generally non-mathematical and more empirical in its orientation. Positivist researchers have focused more on identifying situations in which the principal and the agent are likely to have conflicting goals and then describing governance mechanisms that limit the agent’s self-serving behavior. Positivist researchers have focused more exclusively on intra-organizational principal-agent relationships, especially shareholder-manager relationships (Jensen, 1983, p. 334; Eisenhardt, 1989, p. 59).

The principal-agent stream has also been developed further in the field of organizational and management studies. Especially influential have been the works of Kathleen Eisenhardt (1985; 1988). Eisenhardt developed theoretical and empirical means to motivate the agent in engaging in desired actions and to reduce the likelihood of shirking. By following the ideas of Ouchi and Maguire (1975) concerning organizational control, Eisenhardt developed the famous taxonomy between behavior-based and outcome-based contracts. Further, Eisenhardt also introduced a subset of agency variables to predict whether the optimal contract is behavior- or outcome-based in a given situation (see Eisenhardt, 1989).

The positive theory of agency seems to have connected to a broader body of theoretical work: Organizational Economics (see e.g. Barney & Ouchi, 1986; Donaldson, 1990a; Barney & Hesterly, 1996). In addition to agency theory, Organizational Economics (OE) is composed of transaction cost economics (see Coase, 1937; Williamson, 1975; 1985) and property rights literature (Alchian & Demsetz, 1972). Although some other contributions of OE exist (see Barney & Hesterly, 1996), agency theory

---

3 Sometimes agency theory in general is also positioned with ‘New Institutional Economics’ (see e.g. Braun, 1993; Ferris and Graddy, 1998; Dollery, 2001) and some scholars such as Nilikant and Rao (1994) and Kiser (1999) position it with both Organizational Economics and New Institutional Economics.
and transaction cost economics are clearly its best known components. As the name implies, OE basically applies different economic models and assumptions to the field of organization studies. The primary focus of OE has been in explaining the existence and form of complex organizations (Robins, 1992, p. 524). Organizational economists, such as Barney and Ouchi (1986, xi), denote OE as “the study of organizations and organizational phenomena using concepts taken from contemporary organization theory, organizational behavior, and microeconomics”. Again, some of the fierce proponents of OE go further by defining it as “an analytical paradigm, a framework that addresses the key determinants of the shape and function of organizations” (Hesterly et al., 1990, p. 403, italics in original).

Regardless of the questions concerning OE’s status, the role of agency theory in organizational economics has been twofold. While it has shared some of the assumptions of other theories, such as the bounded rationality assumption from Oliver Williamson’s transaction cost theory (Williamson 1975), it has also contributed to the OE field by introducing concepts such as the ‘agency relationship’ and the ‘agency problem’, for example. In particular, Jensen & Meckling (1976) have provided new insights and understanding with regard to agency relationships inside organizations, by viewing an organization as a “nexus of contracts” between individuals, and by introducing the concept of “agency costs”.

Although the differences between the positive theory of agency and principal-agent stream mentioned above are notable, it is also possible to see these streams as complementary to each other: Whereas positive theory may identify the behavior of the agent and the various contract alternatives available, the principal-agent stream may indicate which contract is the most efficient in any given situation (Eisenhardt, 1989, p. 60).

In addition to economics, the field of political science has been especially active in applying and developing agency theory. Political scientist Barry M. Mitnick was probably the first scholar outside the discipline of economics to recognize the value of the agency framework (see Mitnick, 1975). In the late 1970s, inspired by the work of e.g. Ross (1973), Susan Rose-Ackerman (1978) distinguished the chain of agency relationships in politics-bureaucracy relationships. In the early 1980s, the work of political scientist Terry M. Moe also made an important contribution in
analyzing the theory in different public sector settings. His seminal article “The new economics of organization” (1984) has been widely cited by scholars of different disciplines, including those in the field of economics (see e.g. Eggertsson, 1990).

2.2 Agency relationships

Agency relationships are a general phenomenon. According to Ross (1973, p. 134), “The relationship of agency is one of the oldest and commonest codified modes of social interaction” and Arrow (1985, p. 37) considers agency relationship as “a pervasive fact of economic life”. Jensen and Meckling (1976) have also highlighted the general nature of agency relationship by the following arguments:

The problem of inducing an ‘agent’ to behave as if he were maximizing the ‘principal’s’ welfare is quite general. It exists in all organizations and in all cooperative efforts – at every level of management in firms, in universities, in mutual companies, in cooperatives, in governmental authorities and bureaus, in unions, and in relationships normally classified as agency relationships such as are common in the performing arts and the market for real estate. (Jensen & Meckling, 1976, p. 309.)

In the broadest sense, whenever one party (the principal) depends on the action of another party (the agent), agency relationship arises (Pratt & Zeckhauser, 1985, p. 3). The basic reason for establishing an agency relationship is usually that the principal needs a certain task to be performed. The principal acquires the services of the agent typically because the agent possesses those skills and abilities that are needed for performing the task. The principal himself⁴ may either lack these skills and abilities or he is less effective in performing the tasks than the agent (Petersen, 1993, p. 278).

⁴ ‘He’ refers to ‘he / she’ throughout the book due to the ease of reading.
2.2.1 Types of agency relationship

In most contexts agency relationships are reciprocal (e.g. in the patient-doctor relationship), but they also could be coercive (e.g. in the master-slave relationship). They often exist in private corporations and the market environment, but they also can be found in public bureaus and hierarchical environments (Lassar & Kerr, 1996, p. 615; Worsham et al., 1997, p. 430; cf. Moe, 1984, p. 755; Eccles, 1985, p. 159, p. 167). Traditionally, agency relationships have been considered as contractual relationships (see Jensen & Meckling, 1976; Fama, 1980; Fama & Jensen, 1983). The contract was the central concept for the early agency theorists because it distinguished agency theory from classical and neoclassical economics, in which market forces act as a disciplining mechanism on the owner / entrepreneurs who actively manage firms (Tosi et al., 1997, p. 584). In these contexts, contracts were broadly and vaguely understood to be governance mechanisms ranging in character from formal to informal, explicit to implicit, and objective to subjective (Barney & Ouchi, 1986, p. 211). Regardless of its character, the main purpose of the contract has been in (a) setting the tasks for the agent, and (b) introducing the means through which the agent will be compensated (Perrow, 1986, p. 224; Mason & Slack, 2003, p. 40). Thus, the contract in the agency relationship can be understood to be an instrument enabling different forms of co-operation and control between the principal and the agent. In fact, some scholars including Eisenhardt (1989, p. 58) and Bergen et al. (1992, p. 1) have seemingly interpreted the contract to be more like a “metaphor” of an agency relationship, not as a specific and detailed construct that should be rigorously operationalized.

Agency relationships can range from single-principal-single-agent relationships to more complex multiple-principal-single-agent or single-principal-multiple-agent relationships (cf. Waterman & Meier, 1998, p. 178-180; Mason & Slack, 2003, p. 38). For example, one landlord (the principal) may have only one tenant (the agent), one car repairer (the agent) may have number of clients (principals) and the employer (the principal) may employ number of employees (agents). Also, principals and agents may have dual roles in a way that principals can act simultaneously as some other principals’ agents, and agents as some other agents’ principals. For instance, the chain of representation in parliamentary democracies...
can illustrate this aspect in following way: the legislators (parliament) are the agents of the citizenry, but also the principals of the government, which they elect. Likewise, the government is the agent of the legislators, but also the principal of the national bureaucracy. The national bureaucracy, in turn, is the agent of the government, but also the principal of the regional or local agencies (Vedung, 1997, p. 107).

2.2.2 Levels of agency relationship

Agency relationships can be distinguished at a range of levels of human co-operation, from the levels of individuals, groups, or organizations (Smith & Bertozzi, 1998, p. 326). Traditionally, agency theory has been focused on examining the intra-organizational relationships between individuals (e.g. shareholder-manager, employer-employee) or organizational groups (shareholders-management teams). In addition to these intra-organizational analyses, a range of inter-organizational relationships have also been examined as agency relationships. Various scholars outside organizational economics have already used inter-organizational agency setting in their studies (see e.g. Ferris, 1991; Braun, 1993; Broadbent et al., 1996; Lassar & Kerr, 1996; Ferris & Graddy, 1998). In these studies, the organizational features of organizations acting as principals and agents have been bypassed and the main focus has been on examining the agency relationship and its behavioral effects on the actions of the principals and agents. This implies that neither the purpose nor the analysis of these studies have required exact definitions of what constitutes an ‘organization’ or an ‘organizational principal’ and that the assumption of organizational actors as principals and agents has mainly been taken for granted. Any arguments or analyses on why organizations could or could not be considered as principals and agents have therefore been lacking.

It seems that early agency theorists have not yet clearly defined how the concept of organization should be understood. As the theory originates from economics, especially the versions close to Organizational Economics, applications of the theory have relied on methodological individualism for their organizational definitions and analyses (Donaldson

---

5 A slight exception to this is the concept of ‘collective principal’ among political scientists. See section 2.4.4 for a definition.
As the name implies, methodological individualism takes an individualistic perspective of organizations. From this perspective, organizations are seen principally as aggregations of individual preferences and actions, perhaps even only as a “nexus of contracts” (Jensen & Meckling, 1976, p. 310; Pfeffer, 1997, p. 45) or “institutional arrangements that govern the collectivity” (Hesterly et al., 1990, p. 405). According to this perspective, the ultimate participants in organizational activity are individual human beings, who are and whose actions eventually are the units of all analysis. In this meaning, organizations are not individuals, they do not have their own preferences, motivations or intentions, and they do not exercise choice in the conscious and rational sense that is attributed only to individual people (Jensen & Meckling, 1976, p. 311; Jensen, 1983, p. 327). The organization is essentially a structure designed to harmonize a set of efforts of a group of people, but it can also be a “legal fiction” (Jensen & Meckling, 1976, p. 311), or a “fictional person” who can acquire, hold and dispose of property in its own right (Casson, 1997, p. 79). However, from the perspective of methodological individualism, the construction named ‘firm’ or ‘organization’ itself does not have a real personality independent from its individual members:

People are fundamental first in the sense of being indivisible decision makers and actors; it is people – not organizations – who actually decide, vote or act. The actions of individuals determine the behavior and performance of organizations. Furthermore, only the needs, wants, and objectives of individuals have ethical significance. . . . Finally, it is the people who ultimately create and manage organizations, judge their performance, and redesign or reject them if this performance is found inadequate. (Milgrom & Roberts, 1992, p. 21.)

On the other hand, understanding the organization as a principal or agent seems not to be a problem when the organization and its actions are explained through the actions of its individual members:

Parenthetically, that organizational economics adopts a reductionist point of view does not mean that this view cannot be applied in the analysis of organizational phenomena. . . . For some research questions, the theoretical assumption that firms have a goal or a purpose may fruitfully generate important insights . . . Even though organizational economists might ultimately attempt
to explore the individualistic underpinnings of these aggregate phenomena, such research does not deny the value of a holistic simplifying assumption in generating the insight in the first place. (Barney, 1990, pp. 386-387.)

It is possible to suggest that the theory’s applicability from the original intra-organizational level to the inter-organizational level becomes a matter of concern only if the basic assumptions, concepts and conclusions derived from the original setting no longer hold in the inter-organizational setting. For this reason, the most crucial requirement for understanding organizations as principals and as agents requires the acknowledgement of some kind of organizational boundaries and set of purposes. This is because at the individual level, principals and agents are differentiated from other individual principals and agents by their observable boundaries and purposes. Therefore, the acceptability of organizational principals and agents requires that they have identifiable legal, economic and/or socio-cultural boundaries and agreed purposes so that they can be differentiated from other individuals, groups or organizations. Nevertheless, from the perspective of methodological individualism, these purposes (and the actions based on them) are to be considered only as aggregations of the preferences and actions of the individual members of an organization.

Assuming the principals and agents to be organizations does not require an understanding of them as single-minded and homogenous entities with human characteristics. For this reason, there is no need to exclude the assumptions concerning intra-organizational differences of interests, goals and actions of individuals. For example, a human principal may also have a number of different and competing ideas on how to proceed in a certain situation with his human agent. Still, he has to choose some of these ideas to put into practice and has to abandon others. Equally in organizations, individual members of an organization may have different preferences, but only some of them will be put into practice as the aggregated will of the whole organization.

2.2.3 Assumptions about agency relationship

The literature on agency theory presents a number of behavioral assumptions concerning the principal, the agent, and the agency relation-
ship. It seems that some of these assumptions depend on different disciplinary and paradigmatic approaches, and they may even be contradictory. For instance, the positive agency theoretical literature usually shares the assumption of bounded rationality with transaction cost theory (Barney & Ouchi, 1986, p. 205; Eisenhardt, 1989, p. 64; Charreauks, 2002, p. 253). With bounded rationality, human behavior is assumed to be “intendedly rational, but only limitedly so” (e.g. Simon, 1957, p. xxiv). When individuals are boundedly rational, they recognize that they cannot possibly foresee all the things that might concern them. They understand that communication is imperfect and that understandings are often flawed, and they know that they are not likely to find the mathematically best solution to difficult problems. They act intentionally though, trying to do the best they can, given the limitations under which they work (Milgrom & Roberts, 1992, pp. 129-130). On the contrary, in the more formal, mathematically oriented principal-agent literature, individuals are assumed to be perfectly rational and to have unlimited computational abilities. Further, it is assumed that they can anticipate and assess the probability of all possible future contingencies (Baiman, 1990, p. 342).

The principal and the agent are considered to be self-interested actors. Additionally, some of the agency theorists postulate principals and agents as utility maximizers whereas others do not (explicitly) make such an assumption. The utility maximization assumption is especially important for mathematically oriented principal-agent researchers, because it allows different situations to be modeled and predicted mathematically in a way that would not be otherwise possible (Hendry, 2005, p. 57). Whether the agents are considered as utility maximizers or not, the assumed self-interest of the agents drives them act opportunistically towards their principal (cf. Barney & Ouchi, 1986, p. 205). According to Oliver Williamson (1985, p. 47), “opportunism refers to the incomplete or distorted disclosure of information, especially to calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse”. It is “self-interest seeking with guile” which “includes but is scarcely limited to more blatant forms, such as lying, stealing, and cheating” (Williamson, 1985, p. 47).

Some agency theorists have also made assumptions about the risk preferences of the principal and the agent. The risk preference can be
thought of as the degree of an actor’s preference for adventure rather than security. A risk-averse actor prefers security and therefore seeks some guarantee for the attainment of desirable outcomes. A risk neutral actor, on the other hand, is indifferent to adventure or security (Bergen et al., 1992, p. 4; see also Pratt, 1964; Arrow, 1971). Usually it is assumed that the principal is neutral towards the risk and the agent is averse to risk. The rationale is that the agents, who are usually more unable to diversify their employment, are likely to be more risk-averse than the principals, who are usually more capable in diversifying their investments (Eisenhardt, 1989, pp. 60-61; Bergen et al., 1992, p. 4; Radner, 1992, p. 1406).

One important and widely accepted assumption is that agents differ in their types. The type of agent may refer to such things as whether the agent is careful versus careless, productive versus unproductive, talented versus untalented, trustworthy versus untrustworthy, industrious versus lazy, and so forth. In short, it says something about the agent’s willingness and capacity (i.e. ability) to perform the tasks agreed on. (Petersen, 1993, p. 278.) It is also generally assumed, that in addition to the agent’s actions (a.k.a. ‘effort’), environmental factors influence the outcome of the agency relationship (see e.g. Harris & Raviv, 1978, p. 21; Shavell, 1979, p. 55; Arrow, 1985, p. 37; Petersen, 1993, p. 278). The outcome is usually somehow observable to both to the agent and the principal, and it could also have many facets, such as quality and quantity. It can be, for example, the number of shoes produced by a factory worker, the volume of sales generated by a department store salesperson, the success of a surgical procedure, and so forth. Environmental factors (a.k.a. ‘random factors’) – such as economic conditions in the market, competitors’ actions, and the weather – are issues or conditions that are customarily beyond the agent’s and principal’s control. (Bergen et al., 1992, pp. 3-4; Petersen, 1993, pp. 278-279.)

Most of the agency theoretical literature adopts two very important assumptions concerning the agency relationship. There must be (a) informational asymmetries and (b) goal conflicts simultaneously present in the agency relationship (e.g. Moe, 1984, p. 754; Eisenhardt, 1989, p. 58; Barney & Hesterly, 1996, p. 125; Waterman & Meier, 1998, p. 177). Informational asymmetries can simply be considered as a claim that an agent possesses more or better information about the details of individ-
ual tasks assigned to him, his own actions, abilities and preferences (cf. Eggertsson, 1990, p. 41). The level of informational asymmetries does not need to be stable; it can vary from one situation to the next. The basic requirement is though, that the principals have to face difficulties in acquiring the information possessed by the agent. The other assumption, of goal conflicts, can be understood as a situation where the principal’s and the agent’s desires and interests concerning certain ends are in conflict with each other and that they would therefore prefer different courses of action. From the perspective of agency theory, goal conflicts arise because of the agent’s self-interest and the tendency to maximize or pursue his individual utility. Conflicts between the principal’s and the agent’s goals do not have to be permanent or constant, but there must be a certain potential for them to occur (Milgrom & Roberts, 1992, p. 185).

2.3 Agency problems

The existence of informational asymmetries and goal conflicts can be considered as “the spark plugs” of agency theory (Waterman & Meier, 1998, p. 177). Taken together, these two conditions constitute the agency problem – the possibility of opportunistic behavior on the agent’s part that works against the welfare of the principal (Barney & Hesterly, 1996, p. 125). Clearly, if there were no goal conflicts, the existence of informational asymmetries would not matter and the agent would automatically choose the actions which would accord with the preferences of the principal. Indeed, the assumption and existence of goal conflict is necessary for agency theory. If the utility functions of self-serving principals and agents coincide, there would be no agency problem (Davis et al., 1997, p. 22). Similarly, if the information available to both the principal and the agent were to be the same, the conflicts of interest would not matter since the principal could immediately detect any opportunistic behavior on the part of the agent (Ricketts, 2002, pp. 46-47).

two specific aspects of the agency problem are known as “adverse selection” and “moral hazard” problems (e.g. Arrow, 1985, p. 38; Eisenhardt, 1989, p. 61; Petersen, 1993, pp. 280-281). Given the agency problems described, it can be assumed that principals will not delegate tasks to agents unless they find some important reasons to do so. However, when these important reasons exist and an agency relationship is to be established, the following two normative questions can be formulated: How can a principal detect the right type of agent for accomplishing a task? How can a principal make the agent behave according to the principal’s goals? The first question refers to the problem of adverse selection, the second question to the problem of moral hazard.

2.3.1 The problem of adverse selection

The problem of adverse selection addresses the problems that arise because of informational asymmetries which occur before the principal enters into an agency relationship with the agent. The principal is assumed to know the nature of the tasks the agent should perform and the personal characteristics needed to perform those tasks successfully (Bergen et al., 1992, p. 6). However, in situations of adverse selection, problems evolve from the principal’s uncertainty regarding the agent’s true type. The problem of adverse selection can be developed when the agent has private information about his type that the principal cannot obtain freely. This private information together with the agents’ self-interest may create incentives for agents to misrepresent themselves opportunistically as something that in reality they are not (cf. Barney & Ouchi, 1986, pp. 439-440.) In practice, the problem of adverse selection may take place, for example, in job markets. Job applicants usually differ in their types and employers do not always discern the job applicant’s true type. Employers, for instance, may be unable to observe a job applicant’s intrinsic productivity, and cannot rely on prospective workers’ pronouncements regarding their own attributes since all workers tend to claim that they are highly able. Hence, employers may end up hiring employees of the wrong type. Similar problems may arise in any buyer-

6 The problems of adverse selection and moral hazard are also discussed outside agency theory. According to Arrow (1985, p. 38), both terms “have been borrowed from the practice and theory of insurance”. Arrow himself refers to adverse selection as “hidden information” and moral hazard as “hidden action” (Arrow, 1985, p. 38).
seller situation. If it is impossible for a buyer to observe the quality of a particular good at the time of purchase, sellers may be tempted to lower the average quality of the goods and sell them at higher price than the true quality of the goods would justify (Brown & Sessions, 2004, p. 59).

Without any countermeasures to reduce informational asymmetries, the adverse selection problem may lead to a lowering of the average quality of agents or of the products they are offering. High quality agents may want to withdraw themselves from markets if their quality is impossible to recognize without additional cost. This problem was first highlighted by Akerlof (1970), who showed that the process would continue until only the lowest quality agents were available in the market. Akerlof used the example of a second-hand car market, where information asymmetries are usually high: the owner of a used car is better informed about its quality than a potential buyer who is often unable to discern whether the car is a low-quality ‘lemon’ or a high-quality ‘peach’. The more ‘lemons’ there are on the market, the lower the average quality and the market price for all cars will be – of both good and bad quality cars. Faced with such a situation, the owners of good quality cars may find it unattractive to sell their cars and they may withdraw them from the market. (Brown & Sessions, 2004, pp. 59-60.)

Sometimes the information asymmetries responsible for an adverse selection problem may be reduced by expanding effort and attention. This can be carried out through mechanisms called screening and signaling (e.g. Bergen et al., 1992, pp. 6-7; Milgrom & Roberts, 1992, pp. 154-159; Ricketts, 2002, pp. 32-33). The major difference between them depends on whether it is the agent or the principal who makes the first move.

In screening, the principal makes the first move and chooses to implement some set of information-gathering procedures in order to determine accurately a potential agent’s true type (e.g. Bergen et al., 1992, p. 6; Milgrom & Roberts, 1992, p. 156). For example, an employer may use job interviews and probationary periods in order to learn about a job applicant’s true type. Additionally, he may require letters of recommendation or he may track down the applicant’s previous employers in order to find out if they had been satisfied with the job applicant’s work contribution (Bergen et al., 1992, p. 6; Petersen, 1993, p. 280). Screening is most likely to be an efficient solution when it is relatively easy for
the principal to obtain information about the types of potential agents. Hence, screening is most likely to be used extensively when measures of agents’ types have proven to be valid predictors of their future performance and when those measures are obtained by the principal with relatively little effort or expense. Even when screening is very costly, it may still be the best solution for adverse selection problems if the consequences of a hiring a bad type of agent would be even more costly to the principal. Such is likely to be the case in situations where differences in the type of agent can have a substantial impact on the outcome desired by the principal. (Bergen et al., 1992, p. 6.)

In signaling, agents themselves make the first move by adopting behavior that reveals their private information. Given that the agent knows he has certain desirable capabilities, and that it is to his advantage to be offered a contract, the agent may engage in actions aimed at signaling to the principal that he is the type of agent the principal is seeking (Bergen et al., 1992, p. 6). For instance in job markets, job applicants signal their private information to the labor force-seeking employer e.g. by presenting references from former employers, and diplomas or other educational achievements (Spence, 1973, p. 357). The employer could interpret these expressions as signals of the job applicant's true type.

On the other hand, it is also possible that the agent can find it in his self-interest to send the principal false signals. This would be the case if the benefits or utility the agent can derive from misleading the principal exceed the costs of engaging in the action necessary to send a false signal. Therefore, for an action to provide a signal that is reliable from the principal’s perspective, it must be more costly to pursue for a bad quality agent than it is for a good quality agent. In another words, to be effective, signaling must not only be incentive-compatible for agents of the desired type to be engaged in signaling, but also incentive-compatible for inappropriate types of agents to avoid the signaling. (Bergen et al., 1992, pp. 6-7.) For instance, a company that desires a technically competent and knowledgeable sales force might require a lengthy and rigorous training period for all new recruits. Potential employees who lack the necessary technical competencies or the motivation to acquire the desired knowledge could self-select themselves out of a relationship with the company by not applying for the job or by dropping out before completing the training. On the other hand, the employees who possess
the technical competencies and good motivation can signal their type by completing the training. Another example could be found from pay systems. Paying a wage that is based solely on measured performance is likely to attract the most productive job applicants and to discourage the least productive, to the employer’s benefit. (cf. Bergen et al., 1992, p. 7; Milgrom & Roberts, 1992, pp. 156-157.)

2.3.2 The problem of moral hazard

Once the principal has chosen an agent to perform a task, the next problem for the principal is to get the agent to perform this task in the way preferred by the principal. This post-contractual agency problem of moral hazard may arise in situations where the principal cannot directly observe the agent's actions and where the self-interested agent pursues his private goals at the expense of the principal's goals (Barney & Ouchi 1986, 440; Milgrom & Roberts, 1992, p. 167; Petersen, 1993, p. 281, p. 284.) Indeed, when it is difficult for a principal to monitor the agent, the moral hazard problem assumes that there is a tendency for an agent to produce poor quality/quantity outcomes or to exercise too little effort, care or diligence in providing the outcomes (cf. Milgrom & Roberts, 1992, p. 167).

Concrete aspects of the moral hazard problem may include shirking or other forms of private utility-generating actions, which are not in the best interests of the principal. These could include e.g. the following: taking home company stationery for personal use, printing or making photocopies of personal documents at the office, making personal calls during office hours, charging cell phone batteries in the office, surfing the internet for private matters during office hours, requesting and purchasing ‘state of the art’ equipment even though the basic equipment would be sufficient, and giving projects or contracts to friends and relatives even though there would be more competitive providers available (Tan, 2003).

Self-interest can also make the agent reluctant to share performance information with the principal, or even worse, to motivate the agent to send wrong information to the principal (Bergen et al., 1992, p. 3; Milgrom & Roberts, 1992, p. 167). Moral hazard problem occurs, for instance, when a highly skilled laboratory researcher works on a new per-
sonal business idea on company time, but the work is sufficiently complex that the superiors cannot detect what he is actually doing; or, when managerial employees exaggerate the difficulty of their assignments in order to make their performance appear more impressive. (Eisenhardt, 1989, p. 61; Milgrom & Roberts, 1992, pp. 169-170.)

The principal has two basic options in seeking to control moral hazard in terms of the contracts to be agreed upon: “behavior-based contracts” and “outcome-based contracts” (Eisenhardt, 1985, p. 163; 1988, p. 490; 1989, pp. 59-60). When choosing behavior-based contracts the principal chooses to monitor the agent’s behaviors (actions) and then reward those behaviors. The basic idea behind monitoring is to decrease the information asymmetry between the principal and the agent. The argument is that monitoring procedures are likely to inform the principal about how the agent is actually behaving, and therefore they are likely to curb agent opportunism because the agent will realize that he cannot deceive the principal without the risk of getting caught (Eisenhardt, 1989, p. 60). Thus, a natural solution for the principal is to invest resources into the monitoring of the agent’s actions (Holmström, 1979, p. 74). These investments may include reporting procedures, budgeting systems and field observations, etc. (Eisenhardt, 1989, p. 61; Bergen et al., 1992, p. 4). An example of a behavior-based contract could be the creation of a supervisory role by the management (the principal) to monitor the behavior of those workers (the agents) paid an hourly rate (Sharma, 1997, p. 761).

In some situations, the monitoring procedures may be too expensive or difficult to be worthwhile. In these situations, the other option, namely outcome-based contracts, could be a more logical choice for the principal. As the name implies, outcome-based contracts compensate agents for achieving certain outcomes. As a concrete example, reward schemes such as piece-rate salaries or straight commissions can be considered as forms of outcome-based contract. Outcome-based contracts are considered to be effective in curbing the possibility of an agent acting in an opportunistic way. The rationale is that such contracts are likely to reduce goal conflict because they motivate the agent to pursue outcomes that are incentive compatible with the principal’s goals. Therefore, the contract should be designed in a manner that the actions with the highest payoff to the agent are also those actions that are most appropriate from
the principal’s viewpoint. For instance, if the goal of a company is to increase sales volume, offering a commission would be one way to make increased volume a more incentive compatible outcome for the salesperson. (cf. Eisenhardt, 1989, pp. 59-60; Bergen et al., 1992, pp. 4-5.)

On many occasions, outcome-based contracts can be considered to be the first-choice of the principal. However, the problem with an outcome-based contract is the risk-premium which more risk-averse agents may demand for bearing the risk of outcome uncertainty. From an agent’s perspective, the outcome-based compensation is more insecure than the compensation based on his behavior. Thus, an outcome-based contract is efficient only when the cost of transferring the risk to agent (risk-premium) is less than the costs of monitoring the agent. When agent behavior can be monitored at reasonable cost, behavior-based contracts are more efficient because they allow the principal to avoid the need to pay the agent a risk premium (Lassar & Kerr, 1996, p. 615). This assumption implicitly presumes that there is a scarcity of agents and that the agents have an exit option if they are not satisfied with the principal’s contract offer. According to mainstream agency theorists, if an agent does not like the terms of a contract offered by a principal and the governance structures of that contract, he can always seek a better alternative from elsewhere. If there is a shortage of agents (or principals), the principals (or the agents) will be compelled by market forces to adopt a more acceptable form of contract or its governance structures. Thus, the relative power in contracting for both parties is also dependent on the supply and demand of principals and agents. Therefore, the issues related to risk are most relevant in markets (or market-like situations), where principals and agents have freedom of entry into and exit from agency relationships. However, in situations where there is a shortage of agents or where there exists no exit option for the agent, risk preferences lose their significance (cf. Hill & Jones, 1992, p. 135.)

2.3.3 Agency costs and agency variables

The central challenge for principals is to structure their relationships with their agents to maximize control under limited budget constraint (cf. McLendon, 2003, p. 174). For this challenge, agency theory presents the two inter-related concepts of ‘agency costs’ and ‘agency variables’.
Jensen and Meckling (1976) were first to give definition to *agency costs*, which they considered as the sum of “(1) monitoring expenditures by the principal, (2) the bonding expenditures by the agent, (3) the residual loss” (Jensen & Meckling, 1976, p. 308). Since this classical definition, the concept of agency costs has been defined on several occasions in more or less the same manner. For example, agency costs have been considered to include losses to the principal because the agent does not act in the principal’s interests and the cost of monitoring the activities of the agent (Tosi & Gomez-Mejia, 1989, p. 171), costs of monitoring, motivating and ensuring the commitment of the agent (Nilikant & Rao, 1994, p. 653), costs of investments in monitoring systems and costs of transferring risk to the agent in the form of outcome-based incentives (Lassar & Kerr, 1996, p. 614), costs of agency relationship (Beccerra & Gupta, 1999, p. 184), and the costs of all activities and operating systems designed to align the interests and actions of agents with the interests of the principal (Chrisman et al., 2004, p. 335). Regardless of these definitional differences, in the broadest sense agency costs can be understood to be the total costs of different contracting choices, i.e. costs resulting from neutralizing information asymmetries (behavior-based contracts) and goal conflicts (outcome-based contracts) plus the costs resulting from agent opportunism, i.e. the loss borne by the principal which is caused by the agent acting in his own interest at the expense of the principal.

The other concept, *agency variables*, is related only to the post-contractual situation and to the problem of moral hazard. Agency variables describe the levels of different internal and external conditions connected to the agency relationship that may have implications for agency costs and contract choice. In other words, agency variables are believed to be able to predict the most efficient contracting choice for a given situation. Although the exact number of agency variables has varied in different research settings, at least five variables (A-E) can be identified (cf. Eisenhardt, 1989, pp. 60-63).

---

7 Jensen and Meckling define ‘residual loss’ in the following way: “The dollar equivalent of the reduction in welfare experienced by the principal due to this divergence [of interests] is also a cost of the agency relationship, and we refer to this latter cost as the ‘residual loss’” (Jensen & Meckling, 1976, p. 308).
Variable A: Outcome measurability. The outcome measurability refers to the extent that the outcomes of the tasks are measurable. Some agency relationships may consist of tasks that produce simple and measurable outcomes, whereas other tasks do not produce easily measurable outcomes. Low-measurable tasks are of many facets, which require a long time to be completed, involve joint or team effort, produce ‘soft’, intangible outcomes. Low outcome measurability makes the use of outcome-based contracts more difficult and costly.

Variable B: Outcome uncertainty. Outcome uncertainty as an agency variable refers to the extent to which the agent’s actions have impact on the outcome of his tasks. The extent of the level of outcome uncertainty may depend on the nature of the agent’s work, on environmental factors, or both. High outcome uncertainty makes the use of outcome-based contracts ineffective, since an agent’s effort will have only limited impact on the outcome. It also makes outcome-based contracts more costly, since it becomes more expensive for the principal to pass the risk on to the agent.

Variable C: Task programmability. The variable of task programmability can be defined as the degree to which appropriate behavior and actions by the agent can be specified and verified. It is proposed that the behavior of agents engaged in more programmed jobs is easier and cheaper to observe and evaluate than in the case of non-programmable tasks. Programmed tasks reveal more easily agents’ effort and behavior thereby reducing informational asymmetries. On the other hand, complex and unstructured tasks are likely to be more difficult and expensive to monitor.

Variable D: Goal conflicts. The variable of goal conflicts refers to the extent to which the interests, wants and needs of the principal and agent are in conflict with each other. If there are no goal conflicts, the agent will behave as the principal would like, regardless of whether the agent is controlled or not. As goal conflicts increase, there is greater potential for agent opportunism to occur.

Variable E: Length of agency relationship. When the principal and the agent engage in a long-term relationship, it is likely that the principal will
learn different things about the agent, and so will be able to assess the agent’s behavior more readily and cheaply. Conversely, in short-term agency relationships, informational asymmetries between principal and agent are likely to be greater, since the principal is less familiar with the agent’s behavior and work habits.

Table 1 lists the agency variables presented above and their influence in predicting the principal’s preferred contract choice. The prediction derived from variable (A) states that when outcome measures are unclear or where the principal is willing to invest in monitoring systems, the principal usually offers behavior-based contracts. Conversely, when outcomes are measurable, and where the principal is unwilling to invest in monitoring, he will use outcome-based contracts. (Eisenhardt, 1989, p. 62; Petersen, 1993, p. 281.) The prediction derived from variable (B) proposes that when outcome uncertainty is high and when the principal is willing to invest in monitoring, the principal will prefer behavior-based contracts. This is because of the cost of transferring the risk to the agent. In addition, if the variation in the agent’s actions has little impact on the outcome, there is no point in basing the contract on outcomes, as the extra effort needed to produce a small increase in outcome may be considerable (Eisenhardt, 1989, p. 61; Petersen, 1993, p. 281). However, if outcome uncertainty is low and the principal is not willing to invest in monitoring procedures, he will choose outcome-based contracts.

According to the prediction of variable (C), task programmability is negatively related to behavior-based contracts and positively related to outcome-based contracts. The rationale behind this prediction is that the

Table 1. Agency variables and their effects on contract choice

<table>
<thead>
<tr>
<th>Agency variable</th>
<th>Behavior-based contract is efficient when:</th>
<th>Outcome-based contract is efficient when:</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Outcome measurability</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>B. Outcome uncertainty</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>C. Task programmability</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>D. Goal conflicts</td>
<td>Low</td>
<td>High</td>
</tr>
<tr>
<td>E. Length of agency relationship</td>
<td>Long</td>
<td>Short</td>
</tr>
</tbody>
</table>

(Source: Adapted from Lassar & Kerr, 1996, p. 616)
low programmability also implies more costly and difficult monitoring. Therefore, it is predicted that when task programmability is low and the principal is not willing to invest in monitoring, he will choose outcome-based contracts. Likewise, if the task programmability is high, and the principal is willing to invest in monitoring, the principal will choose behavior-based contracts. Variable (D) implies that when the goal conflicts are low and when the principal is willing to invest in monitoring arrangements, he will choose behavior-based contracts. If goal conflicts are high, and if he is not ready to establish stringent monitoring, he is likely to choose outcome-based contracts. Lastly, variable (E) refers to length of agency relationship. It predicts that in when an agency relationship will last or has lasted a long time, and when principal is ready to invest in monitoring procedures, he will choose behavior-based contracts. Likewise, when an agency relationship is established on a short-term basis, and where the principal is not willing to invest in monitoring procedures, outcome-based contracts become more beneficial to the principal.

Agency variables present their predictions in a form of ideal contract choice. Nevertheless in real contracting situations, the two contracting options do not need to exclude each other. On the contrary, the logic of both types of contracts can be used simultaneously in a manner where they support each other. It is possible for the principal to pay a small fee to the agent which is independent of the outcome, plus a reward which depends on the outcome. In these cases, the behavior-based contracts protect the agent against outcome uncertainty whereas an outcome-based contract provides incentives to work harder. For example in professional ice hockey, players are sometimes paid a base salary plus bonuses on the basis of achieving certain performance outcomes, such as meeting a certain goal target during the season. (Petersen, 1993, p. 282; Mason & Slack, 2003, p. 41.)

2.4 Previous research applications of agency theory

Research and studies applying agency theory have been conducted using various methods in a range of disciplines. Theoretical systematizations and overviews have been made, although there is still room for deeper inter-disciplinary analysis about the origins, different forms and
functions of agency theory. Theoretically and empirically oriented research has been conducted from a range of perspectives by using both quantitative and qualitative methods. The following sections present the content and the main findings of these studies.

2.4.1 Theory testing studies

In some studies, agency theory’s capacity to describe, explain and predict are examined and tested. In these studies, the common objective has been to identify a variety of agency problems and to demonstrate that behavior-based or outcome-based contracts can solve these problems. Another significant focus has been in indicating the most efficient contract alternative in a given situation by using a subset of agency variables to predict whether the contract is behavior- or outcome-based (cf. Eisenhardt, 1989, pp. 68-69). Most of the ‘theory testing’ studies have been conducted in the context of private corporations, where the agency relationship is typically understood as intra-organizational relationship between individuals or groups.

The empirical support for agency theory in these studies has been mixed. Some researchers, like Eisenhardt, have argued that agency theory “is testable, and has empirical support” (Eisenhardt, 1989, p. 70). Eisenhardt’s statement was based on her review of 12 empirical studies applying the quantitative methodology. Research subjects in these studies focused on matters such as the separation of ownership from management in large corporations, salary choices and compensation forms for sales people in retailing, and transfer pricing in corporations. On the other hand, e.g. the meta-analyses conducted by Dalton et al. (2003) did not find support in agency theory’s proposed relationship between ownership and firm performance.

Other moderate results can be found. A study by Gomez-Mejia and Balkin (1992) applied agency theory to test hypotheses on the determinants of faculty pay in universities. According to Gomez-Mejia and Balkin, administrators of universities (principals) face a classical agency problem with respect to faculty (agents). This is because informational asymmetries between faculty and administrators create steep agency costs for the latter if they attempt directly to monitor faculty behavior. Due to the complex nature of academic work, monitoring is not easy.
or cheap. Accordingly, the administrators may tie faculty pay to such behavioral outcomes as research productivity in order to align the interests of the faculty with those of the university. On basis of their research, Gomez-Mejia found that the outcomes of the agent performance (top-tier articles) that most closely align the interests of principals and agents were indeed found to have the greatest impact on faculty pay. As a limitation of their study and agency theory, Gomez-Mejia and Balkin mentioned the limited scope agency theory offers. According to them, reasons other than pay were also likely to play a crucial role in faculty members’ performance. These individual factors include the intrinsic psychological satisfaction gained from teaching students and serving as mentors to others, and receiving public recognition from colleagues. Nevertheless, the view of Gomez-Mejia and Balkin concerning the applicability of agency theory in their research setting seems to be very positive. According to them, agency theory can be meaningfully used to analyze internal control relationships between allocators (principals) and those receiving allocations (agents), and that agency theory is robust and useful as an explanatory framework for examining monitoring issues or agency problems internal to organizations.

A laboratory experiment conducted by McLean Parks and Conlon (1995) examined how agency contracts could be affected by the ability to monitor an agent’s actions and environmental munificence. They found only partial support for agency theory’s assumptions. Their findings suggested that agency theory, especially the effects of monitoring, applies under conditions of economic environments marked by munificence but fails in environments marked by scarcity. Stroh et al. (1996) investigated the effects of agency variables on the compensation that middle-level managers receive in different companies. Their study supported agency theory’s predictions relating the middle-managers’ task programmability and the expected length of their agency relationships to variable pay. On the other hand, their study did not confirm some of the theory’s predictions related to high-risk situations.

The laboratory experiment of Tosi et al. (1997) found that agency theory gained partial, but not total support. More specifically, they found that the main effects of incentive alignment are consistent with the theory (outcome-based contracts lead to reduced conflicts of interest). However, contrary to the theory’s assumption, they also found that
monitoring procedures did not make the agents’ decision more consistent with the welfare of the principal.

It seems that there has not been significant interest in testing agency theory in inter-organizational agency relationships, although some exceptions can be found. Wells (1991) examined the service performance monitoring activities of municipal bureaucracies. The results of Wells’ study were contrary to the expectations derived from agency theory. For example, little difference was observed between monitoring and non-monitoring municipal organizations on the variables posited to influence monitoring. Wells’ study included both organizational level and individual level hypotheses concerning the behavior of the principals (elected executives and council chairpersons) and agents (administrators and public work personnel). Meier et al. (1995) investigated politics-bureaucracy agency relationship in the context of agricultural policy. They found that some of the basic assumptions of the theory, like the goal conflict and information asymmetry, were less tenable in the context of their research. On the other hand, positive results can also be found. In their private sector setting, Lassar and Kerr (1996) examined the manufacturer-distributor relationship from the perspective of agency theory and agency variables. On the basis their study, they suggested that agency theory could provide a range of significant insights into the economic basis for inter-organizational relationships.

Quantitative applications have shown that it has seemed impossible to either validate or disprove the general tenets of agency theory. No single ‘right’ or unitary version or form of agency theory exists. The great number of studies which have been conducted also differ in their basic assumptions, dependent and independent variables and agency problems they point out. For instance, the major part of the quantitative research ignores the adverse selection problem and focuses only on the moral hazard problem. In addition, the differences in contexts (e.g. private / public) and in the level of agency relationships (e.g. intra-organizational / inter-organizational) are obstacles when issues of generalization are considered. Although this fluidity of agency theory has positive effects on the development of the theory, it also suggests something of its limitations. When the results of this category’s studies are examined, one should always pay attention to the way that agency theory is described and understood and to the context in which it is applied.
2.4.2 Theory development studies

The central objective of theory development studies has been to develop agency theory further. The main rationale behind these approaches is that agency theory is unrealistic, narrow or incomplete in some other way. The development of the theory is often followed by attempts to integrate new concepts, propositions, assumptions or even complete theories to agency theory.

For instance, Hill and Jones (1992) and Shankman (1999) have attempted to develop agency theory by integrating it into stakeholder theory. The ambitious objective of Hill and Jones was to construct a new paradigm. As a result of their work, Hill and Jones reported that they have established a research paradigm called “stakeholder-agency theory”. According to them, this paradigm explains specifically certain aspects of the strategic behavior of the firm, the structure of incentive mechanisms, and the institutional forms that have evolved to control the contracts between managers and stakeholders. Similarly, Shankman’s objective was to show how agency theory could be subsumed within a stakeholder model of the firm. On the basis of his theoretical analysis, Shankman argued that agency theory should and could include recognition of stakeholders, and also share some of the behavioral assumptions related to stakeholder theory.

Noorderhaven (1992), Nilikant and Rao (1994), have also attempted to provide complementary, theoretical insights into agency theory especially with regard to agency contracts. The study by Noorderhaven attempted to provide new theoretical information concerning the concepts of contract and contract enforcement. As a conclusion of his work, Noorderhaven demanded that greater scholarly attention be paid to the obligations of the agency contract and drew a new theoretical distinction between the internal and external enforcement of agency contracts. On the other hand, the study by Nilikant and Rao criticized agency theory’s contract design strategies, especially from the viewpoint of outcome uncertainty. Instead of the behavior- and outcome-based contracts, they offered more structural and cultural mechanisms, such as trust and collaboration, for reducing outcome uncertainty in organizations.

More recent studies by Wright et al. (2001) and Brown Johnson and Droege (2004) have also tried to develop agency theory by attempting to reformulate the assumptions of the theory. Both of these studies
have been greatly influenced by behavioral and cultural approaches. Wright et al. decided to relax a number of agency theory’s assumptions (e.g. self-interest). Instead of these, they offer a set of new propositions, which from their viewpoint provide a more realistic alternative. Brown, Johnson and Droege have also questioned agency theory’s assumptions by discussing conflicting interests and self-interested behavior in the context of cultural differences. They concluded that some cultures might attenuate these assumptions and thereby temper agency theory’s predictions. For instance, Brown, Johnson and Droege suggested that non-Western cultures may have a stronger preference for behavior-based contracts, because some of these cultures tend to be in tune with goal interest alignment and co-operation between the employers and employees.

It seems clear that some of the studies attempting to develop agency theory which were examined have contributed a greater understanding of the limitations of agency theory and offered new views to upgrade the theory. Nevertheless, the major problem for these studies is that they have rarely made any significant impact outside their own specific research areas and disciplinary contexts. In addition, when the basic structure of agency theory is modified, it is possible that the theory loses an essential part of its robustness, coherence and generic nature. Although the modification of the basic assumptions of the theory may be of benefit to the theory by making it more realistic, at the same time it is possible the theory loses a great deal of its own uniqueness of viewpoints that were based on its original assumptions.

2.4.3 Studies utilizing agency theory as a heuristic framework

The primary research objective of studies falling into this category has not been to test or develop the agency, but to utilize it as a conceptual framework, heuristic tool, or as an organizing concept. The purpose of agency theory in these studies has been to offer new insights or to clarify some complexities that exist in different theoretical and empirical contexts. In some of these works, there is also a short analysis or evaluation of the suitability and functioning of agency theory in the chosen context. It is worth noting that most of the studies falling into this category are conducted mainly in the context of public and non-profit sector organizations (see Table 2).
### Table 2. Selected studies applying agency theory as a framework

<table>
<thead>
<tr>
<th>Author</th>
<th>Context</th>
<th>Main strengths reported</th>
<th>Main weaknesses reported</th>
</tr>
</thead>
<tbody>
<tr>
<td>Braun (1993)</td>
<td>Policy maker-intermediary funding organization</td>
<td>- Principal-agent “structure gets more prominent in the political system in the wake of government attempts to reshape the public sector” (p. 159).</td>
<td>- “political action in principal-agent relationships is ruled by different incentives than economic action” (p. 159).</td>
</tr>
<tr>
<td>Koelble (1996)</td>
<td>Party activist-representatives</td>
<td>- Results “support the general propositions and predictions” of AT (p. 260).</td>
<td>- AT “is extraordinarily focused and assumption driven . . . it is not always clear who is the principal and who is the agent in a voluntary organization” (p.261).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- AT “provides interesting ways of thinking about intra-organizational relationships and distribution of power” (p. 261).</td>
<td>- “broader influences on the political parties such as cultural movements, ideological debates . . . which may affect the voting patterns are all outside the model” (p. 261).</td>
</tr>
<tr>
<td>Broadbent et al. (1996)</td>
<td>Purchaser-provider in public sector</td>
<td>- Not mentioned.</td>
<td>- AT’s “logic is ideological, in that is indented to create and sustain relations of domination” (p. 270).</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>- “there may be difficulties in its [AT’s] universal applications in across all social contexts” (p. 271).</td>
</tr>
<tr>
<td>Ferris &amp; Graddy (1998)</td>
<td>Purchaser-provider in public sector</td>
<td>- AT has “much to contribute to our understanding of existing governance structures as well as their reconfiguration to improve public sector performance” (p. 228).</td>
<td>- “A perplexing dimension of the public sector applications of the principal-agent theory is the existence of multiple principals. . . . Conflicting pressures from multiple principals make it difficult to predict agent responses” (p. 230).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- “[I]nstitutional economics [AT included] is useful for explaining contractual relationships in the presence of the information asymmetry, divergent objectives, and uncertainty that often characterize public sector transactions” (p. 230).</td>
<td>- “In the public arena, agents have multiple principals, making the pursuit of optimal incentive structures more complex, if attainable at all” (p. 237).</td>
</tr>
<tr>
<td>Mahaney &amp; Lederer (2003)</td>
<td>Project manager-developer</td>
<td>- AT “can be applied to understand the failure of IS projects. By doing so, it does not contradict other IS project management research, but instead provides a framework for understanding it” (p. 8).</td>
<td>- Not mentioned.</td>
</tr>
</tbody>
</table>
The inter-organizational setting was explored by Braun (1993), who applied agency theory as the organizing theoretical concept in framing the research policy-making relationship between policy makers (parliament and government) and intermediary funding agencies (‘mission agencies’). Braun illustrated his theoretical analysis with empirical examples derived from the funding systems of four different countries. On the basis of his analysis, Braun found agency theory to be a promising theoretical description which grasps the underlying dynamics ruling the interactions, but that it does not suffice to understand these dynamics. According to Braun, political action differs greatly from economic action. For example, agents may gain extensive autonomy from political control. Braun also argued that it is not the economic efficiency that guides the actions of the politicians, but the political cycle and re-election pressures.

A study by Koelble (1996) focused on the relationship between representatives and their intra-party constituencies in social democratic parties from three different European countries. In this setting, Koelble examined whether agency theory provides a useful methodological tool for the comparative analysis of intra-party struggles over organizational distributions of power. As result of his analysis, Koelble found that agency theory could indeed offer avenues for intra-organizational studies into decision-making processes. On the other hand, Koelble also found some disadvantages of the theory, such as the narrowness of the theory’s assumptions and difficulties when determining who is the principal and who is the agent in the context of voluntary organizations.

The objective of the inter-organizational level study by Broadbent et al. (1996) was to raise questions about the development of contracting and accountability relationships in the public sector in the United Kingdom. The work also included an evaluation of agency theory and its suitability for public sector settings. On the basis of their analysis, Broadbent et al. argued that agency theory is underdeveloped in the sense that it does not take sufficient account of the nature of trust relationships. Broadbent et al. also raise a set of questions concerning the extent of the principal’s right to instruct the agent, the ideological and normative nature they see in agency theory, and the applicability of the theory outside its original economic context.
Ferris and Graddy (1998) investigated the potential of agency theory in conjunction with the transaction cost approach to help with issues related to improving public sector performance. The theoretical discussion in their article was focused on three contractual approaches: Local government contracting, fiscal decentralization, and performance budgeting. Ferris and Graddy paid attention to information asymmetry, which they considered to be a generic problem underlying many of the tensions in public management. Unlike Broadbent et al., Ferris and Graddy found agency theory useful for illuminating and designing institutional structures for service delivery. Despite this finding, they also noted some general limitations in applying private sector models to the public sector. For instance, the differences in incentive structures and decision-making processes, and the complexity of the objectives sometimes differ greatly between the private and public sectors.

Mahaney and Lederer (2003) applied agency theory in order to examine relationships that exist in information systems (IS) projects. In their intra-organizational setting, Mahaney and Lederer gathered data which consisted of the structured interviews of 12 IS project managers with the intention of showing and demonstrating how agency theory can be applied to understanding the outcome of the IS projects, and how it might be used to suggest improvements to IS project management. Mahaney and Lederer operationalized some of agency theory’s constructs including goal conflict, private information, shirking, monitoring, task programmability and applied them in the context of IS project management. As a conclusion of their study, Mahaney and Lederer stated that agency theory indeed provides a framework for understanding and explaining some of the possible causes of project failure. However, Mahaney and Lederer suggested that the theory needs to be statistically tested which would allow for a better assessment of the theory’s applicability to IS development projects to be made.

It also seems that studies that utilize agency theory as a heuristic framework have suffered from the diversity of the forms of agency theory. In addition, a systematic discussion about the strengths and weaknesses of the theory has in many respects been missing. Observations about the strengths and weaknesses of agency theory have occurred only occasionally. In addition, the applicability of the framework and the evaluation of its strengths and weaknesses are greatly dependent
on the context of the application and on the precision of conducted operationalizations. However, it seems that agency theory has clearly illuminated different phenomena and offered new types of insights.

2.4.4 Studies in the field of higher education

As concluded in the Chapter 1, agency theory was relatively unknown in the field of higher education in 1980s and 1990s. However, the 2000s have witnessed a rapid growth in studies which have applied agency theory specifically for examinations of the government-higher education institution relationship.

McLendon (2003) examined various approaches and models with the intention of finding prospective research directions for the study of the politics of higher education in the U.S. context. One of the models that McLendon examined was agency theory. McLendon analyzed the relationship between state executives and legislatures (principals) and state higher education boards (agents) by proposing various questions to be examined in the future. Then McLendon shifted the level of his analysis down to the board-university relationship where he raised the problem of multiple principals: “When faced with commands from multiple or even competing principals, which principal do universities follow?” (p. 175). Another topic that McLendon suggested for examination was “whether and to what extent the politics-bureaucracy relationship in the higher education arena is inherently more conflict-prone than the relationship between elected and non-elected officials in other public agency settings” (p. 175). According to McLendon, finding this out would identify potentially significant implications for both policy adoption and implementation behavior. In general, McLendon’s short analysis views agency theory as a potential and positive research tool which “provides a useful conceptual lens” (p. 173).

An empirical study by Liefner (2003) analyzed forms of resource allocation in university systems and their effects on the performance in higher education institutions. Agency theory was employed in a part of Liefner’s analysis. From a theoretical point of view, Liefner made virtually the first systematic attempt to define who are the possible principals and agents in the context of higher education. According to Liefner (p. 477):
In higher education the principal can be a ministry of science and education, the management board of a university, a president, dean, or department chair. The agents are those actors in higher education, who receive assignments, funds, and salaries from the principals. Therefore, a number of higher education managers, for example, heads of departments, are simultaneously principals and agents, whereas most of the professors, researchers, and lecturers can be viewed primarily as agents.

Liefner also recognized that the assumptions concerning goal conflicts and information asymmetries are especially relevant in the higher education context. Because of the specialized knowledge of the faculty, the production of higher education is very difficult to monitor, particularly at the level of research groups and individual scholars, but also at the institutional level. In order to avoid a situation where some agents take advantage of the fact that their efforts are hard to control, Liefner suggested that the principal should use outcome-based contracts in a form of performance-based funding procedures. Based on this analysis, Liefner formulated two hypotheses (pp. 478-479):

1. Agents that have been rather inactive before the introduction of performance-based resource allocation will have to work harder.
2. With performance-based resource allocation agents will tend to avoid projects with a high chance of failure. Departments and individuals will concentrate on activities where success can be expected because they will have to meet a formula’s criteria or market demand.

Liefner ‘tested’ these hypotheses with the empirical (qualitative) data that consisted of interviews with 53 professors at the six selected universities in different countries. On the basis of his empirical analysis, Liefner found that the instruments of performance-based budgeting worked largely as predicted in theory. However, although the hypotheses concerning the changes in individual behavior were correct, Liefner found that universities with a large number of highly motivated and qualified faculty were successful regardless of the form of resource allocation. Despite the result that a form of resource allocation could not directly influence the long-term success of universities, Liefner explained that it
still could (a) force universities and individuals to pay attention to the
needs of governments and taxpayers, (b) help to adjust the organiza-
tional structures of universities more quickly to the emerging needs and
opportunities, and (c) be used to re-allocate funds to those groups and
scholars that have proved to be successful and to reduce the budgets of
those who are not performing in an acceptable way.

A recent contribution by Gornitzka et al. (2004) attempted to inte-
grate the perspective of agency theory to the sphere of contract arrange-
ments between state and higher education institutions. Gornitzka et al.
analyzed the strengths and weaknesses of established contract arrange-
ments in Finland, Sweden, and Denmark. The authors made several
tentative and incidental observations through agency constructs such
as adverse selection, moral hazard, and information asymmetry. After
their analysis, Gornitzka et al. concluded that a closer integration of the
external quality evaluation system with other instruments of regulation
is likely to decrease informational asymmetries and thus provide greater
transparency and accountability. However, Gornitzka et al. concluded
that it is not possible to reduce this information asymmetry to zero, be-
cause the institutions will always know more about their functioning,
efficiency, and quality than the state authorities. Gornitzka et al. also
considered other functions than control functions of agency contracts.
On the basis of their analysis, they argued that contracts also have strong
elements of consensus building and mutual trust.

In his paper Lane (2005) provided a short overview of the applica-
tions of agency theory to higher education. As with McLendon’s ex-
amination (2003), Lane examined the context of U.S. higher education
from the disciplinary perspective of political science. Lane’s analysis put
special emphasis on the principal’s role in agency relationship where
he distinguished between three different types of principals: single,
multiple, and collective. According to Lane, the single principal situa-
tion is the least complex but also the least common of classifications in
higher education governance structures. The multiple principals situ-
ation (e.g. governor, legislator, higher education commissioner, coor-
dinating board) is more common and more complex. The situation of
multiple principals raises difficult questions for principals: “Who moni-
tors the agent to ensure compliance? Do all principals equally share in
the cost of monitoring and enforcement?” (p.17). But according to Lane,
universities also face problems, like “How does an institution decide which [principal’s] request to follow?” (p. 16). On the other hand, Lane observed that the existence of multiple principals also “increases the agent’s ability to engage in shirking behavior, particularly if the agent is able to play the principals against each other” (p. 21).

According to Lane, while collective principals can be viewed as single entities (e.g. a governing board), “their differentiation from a single actor is that multiple individuals must agree on the nature of the contract with the agent” (p. 22). Lane argued that like multiple principals, collective principals are also common in higher education (e.g. legislature, governing board), and that the key question is “should these entities be viewed as unitary actors or as collective actors?” (p. 18). As an answer to this question, Lane offered a range of views based on potential voting patterns that take place inside the collective principal (e.g. unanimous vote, majority vote). After his analysis, Lane also provided a short assessment concerning the usefulness of the theory. Lane’s main conclusion was that agency theory as a framework “brings an array of benefits toward expanding understanding of the theoretical underpinnings of higher education governance and administration (e.g., the relationship between principals and agents, the impact of structures on agent activity, levels of shirking in the academy, and the impact of transaction costs on organizational effectiveness” (p. 23).

Although agency theory has been clearly introduced in the field of higher education by recent research of different scholars, much of the basic work with theory is still not being done. With the exception of Lane’s work, the role of agency theory has been treated as being of secondary importance, and priority has been given to the subject of the study. For this reason, theorizing has been rather shallow and many of the important concepts of agency theory have not yet been profoundly and systematically defined and operationalized. Also, overall discussion about the strengths and weaknesses of the theory is missing. Despite the important contribution of introducing the theory for analyzing different aspects of the government-university relationship, it seems that agency theory has not yet been properly evaluated, deeply explored or widely applied in examining the theoretical and empirical dimensions of the government-university relationship.
2.5 Contributions and criticism of agency theory

The contributions of agency theory are greatly dependent on how it is applied and in what types of research setting it is utilized. Nevertheless, in general, agency theory has been considered as providing a generic and relatively simple and broad framework, which has been applied by a number of scholars in different disciplines within the social sciences. However, like any other theory, agency theory has confronted criticism. The general nature of the criticisms has been rather sporadic and sometimes case specific. Nevertheless, scholars such as Perrow (1986) and Donaldson (1990a; 1990b; 1995)\(^8\) have been able to present more systematic and coordinated efforts to criticize agency theory. Some of this criticism has been also answered by the proponents of agency theory including Barney (1990) and Petersen (1993). From their perspective, the criticism has been either misguided or at least insufficiently argued.

2.5.1 General contributions of agency theory

Agency theory has been considered especially valuable in re-establishing the importance of incentives, interests and information in organizational thinking. It assumes that whether we like it or not, much of organizational life is partly based on people’s self-interest, opportunism and goal conflicts. In addition, the theory has drawn attention to the issues related to information, and especially the asymmetries of information. An important contribution of agency theory is its risk implications. Organizations are assumed to have uncertain futures. Agency theory extends the ramifications of outcome uncertainty to their implications for creating risk. Uncertainty is viewed as risk / reward trade-offs with the implication that outcome uncertainty coupled with differences in willingness to accept risk should influence contracts between the principal and the agents. (Eisenhardt, 1989, pp. 64-65.)

Agency theory draws attention, above all, to the theoretical and practical issues related to control. The theory asserts that there are two

\(^8\) The criticisms of Donaldson are also orientated towards Organizational Economics in general. Donaldson discusses agency theory mainly in the context of corporation management. However, the criticism is so general that it can also be applied to other agency relationships.
problems for intra- and inter-organizational settings: the problems of adverse selection and moral hazard. The theory also points to perspectives and mechanisms for overcoming these problems. Recognizing the problem of adverse selection offers more understanding, for example, as to why the recruitment of an agent might sometimes fail, and why there is a need to reduce information asymmetries between the principal and the prospective agent. The problem of moral hazard, on the other hand, has increased the understanding of why organizations or individuals invest in monitoring mechanisms, and why piece-rate salaries are sometimes used. Additionally, agency variables have been able to clarify the benefits and shortcomings of different control procedures in a certain context.

In general, it seems that agency theory has made its greatest contributions in understanding the nature of the goal conflicts that can arise between principals and agents, informational asymmetries and the potential problems that result from the different forms of agent opportunism, and the governance structures that evolved to contain them (cf. Davis et al., 1997, p. 45). The scholarly interest in agency theory has seemingly not decreased in the last two decades. On contrary, new fields of applications are being introduced continuously. Also, the numerous attempts to develop the theory further can also be interpreted as confirmation of the general perspective and problems that agency theory attempts to address. Although the descriptive, explanatory and predictive qualities of agency theory still seem to have remained context-bound and debated, the theory has offered alternative views for understanding the dynamics of different types of agency relationships. As a framework it has provided “interesting new ways of thinking” (Koelble, 1996, p. 261), it has had “considerable value in helping to sort out and clarify relationships of power” (Laffin, 1997, p. 56), and contributed “understanding of existing governance structures” (Ferris & Graddy, 1998, p. 228).

2.5.2 Criticism of the behavioral assumptions

The contributions of agency theory are the same issues that have faced criticism; what has been its strength from one perspective has become its weakness from another perspective. Most usually the heaviest criticism has been concentrated on the behavioral assumptions of agency theory.
Opponents of the theory usually argue that it presents a narrow model of human motivation and that it makes unnecessary negative moral evaluations about people. In particular, the assumptions about self-interested and opportunistic behavior are considered problematic or even false. Self-interest, as a sole motivation of human behavior, is criticized for being an overly narrow model of human behavior. According to critics, focusing on self-interested behavior makes it possible that for the wider range of human motives to be ignored, including the need for achievement, altruism, respect and intrinsic motivation towards an inherently satisfying task (Donaldson, 1990, p. 372; Davis et al., 1997, p. 20). According to Perrow (1986, p. 234), who has been one of the most vocal critics of the theory:

Agency theorists examine the structures favored by capitalism and bureaucracy and find much self-regarding behavior; they then assume that this is human nature. They neglect the enormous amount of neutral and other-regarding behavior that exist (and must, for organizations even to function) and the structures that might increase it.

Perrow has even concluded that agency theory “may be dangerous”, because “[t]heories shape our world; they encourage us to see it in a certain way, and then we exclude other visions that direct our actions” (Perrow, 1986, p. 235). The criticism has also been directed on the assumption of opportunistic behavior. This has been regarded as an “overly generalized” and “cynical” conception of human morality (Donaldson, 1990a, p. 373). In addition, it is considered that the fact that agency theory lacks perspective on matters such as reciprocity, work ethics, and especially on trust, makes it even less realistic (cf. Donaldson, 1995, p. 24; Beccerra & Gupta, 1999, p. 186). Indeed, in situations where the principal is likely to be more trusting and co-operative toward the agent, agency theory’s normative focus on avoiding or mitigating the potential agency problems becomes less relevant, since it has nothing or very little to say in situations of goal congruence (Arthurs & Busenitz, 2003, p. 149).

A proponent of agency theory, Barney, admits that despite its robustness, the assumption of self-interest is indeed limited. Thus, he welcomes all attempts to produce a “more sophisticated and complicated model of motivation” by integrating more traditional management and
organization theories with agency theory (Barney, 1990, p. 387). Indeed, the question of what constitutes self-interest also seems to be problematic from the philosophical perspective. For instance, it seems to be a matter of definition as to whether altruistic behavior can also be explained in terms of self-interest. If altruistic behavior is understood as a self-interested pursuit of psychological benefits (e.g. for the sake of good conscience), can this type of behavior be regarded as ‘self-interested’ (cf. Perrow, 1986, p. 230; Hendry, 2005, p. 57)?

Partly because of these difficulties, Hendry (2005, p. 57) has argued that the assumption of self-interest “is not in fact as unreasonable as some of its critics have suggested”. In fact, according to Hendry, “In the first place, it is generally plausible”, because “[m]ost people are surely driven to some extent by self-interest” (Hendry 2005, p. 57). Barney, on the other hand, disagrees when the criticism comes to the concept of opportunism. According to him, agency theorists do not need to adopt the assumption that all agents are behaving opportunistically all of the time (Barney, 1990, p. 385). This is also the position of Oliver Williamson, who introduced the concept of opportunism into organizational behavior:

I do not insist that every individual is continuously or even largely given to opportunism. To the contrary, I merely assume that some individuals are opportunistic some of the time, and that differential trustworthiness is rarely transparent ex ante. (Williamson, 1985, p. 64, italics in original.)

Barney reminds us that in some settings it is not easy or cheap to distinguish between those who will actually behave opportunistically and those who will not. In addition, agents who behave opportunistically may have a strong incentive to represent themselves as honest and non-cheating partners (Barney, 1990, p. 385; Arrow, 1971). For this reason, it is not always possible to distinguish between an agent as either opportunistic or trustworthy. Therefore, the proponents of agency theory think that it is reasonable for the principal to adopt an assumption of the opportunistic agent. As a consequence, ex-ante efforts (screening) and ex-post safeguards (behavior- and outcome-based contracts) are created. “Otherwise, those who are least principled (most opportunistic) will be able to exploit egregiously those who are more principled” (Williamson, 1985, p. 64).
Despite their criticism, some of the critics have admitted the existence of agent opportunism. For example Donaldson (1995, p. 183) admits that sometimes agents, “clearly act opportunistically” and that this “opportunistic behavior clearly contributes in some degree to organizational dysfunctionality, suboptimal goal attainment”. Seemingly, the disagreement is therefore not about either the possibility or the frequency of the opportunistic behavior. The difference is in the basic attitudes toward those situations, where there is the possibility for opportunistic behavior to arise. Thus, the general disagreement is related to the conceptions about whether or not the agent’s behavior should be axiomatically considered ‘opportunistic until proven innocent’.

2.5.3 Criticism of the theoretical capacity

Agency theory has also been criticized for its capacity as a theory. According to Perrow (1986, p. 224), agency theory “does not have a clear problem to which it offers a solution” and it “is hardly subject to empirical test since it rarely tries to explain actual events or make predictions” (see also Ghoshal, 2005). Perrow also questions the possible utility and empirical relevance of the adverse selection and moral hazard problems for organizational analysis. For example, on the adverse selection problem, Perrow argues that:

For most organizations there is considerable slack with regard to selection: the very best applicant from the pool is not needed; one who is just good enough will do. Since neither the applicant nor the employer can be very sure about each other’s type or qualification, both depend heavily on subsequent events to affect a minimally desirable match. The training of the employee and the type of supervision and other working conditions will have much more to do with performance than will lack of information as to the employee’s real type. Organizations recognize that the costs of optimal selection are high and the techniques uncertain, so positions are designed to fit the average person. (Perrow, 1986, p. 229.)

However, Eisenhardt (1989, p. 72) has replied that “Agency theory provides a unique, realistic, and empirically testable perspective on problems of co-operative effort”. Unlike Perrow, Eisenhardt based her argu-
ments on direct empirical findings. Petersen (1993), a sociologist like Perrow, has defended on his own behalf the empirical relevance of the problems of adverse selection and moral hazard. Contrary to Perrow’s arguments, Petersen believes that the problem of adverse selection is “quite important” (Petersen, 1993, p. 288). Petersen’s opinion is that companies do rely on letters of recommendation, interviews, probationary periods and another forms of screening: Even if the principal's only mission is to find a satisfactory or “good enough” employee, finding that one might not necessarily be easy (Petersen, 1993, p. 288). But, as in the case of theoretical validity, the question of the empirical relevance of agency problems is a matter of empirical research, not just scholarly opinions. As was discussed in the previous section, agency theory has indeed had problems when it comes to the testing of the theory. One could also draw conclusions from the fact that empirical studies concentrating on the problem of adverse selection have been relatively rare.

Another major line of criticism concerns the question of how agency theory functions as a theory. Among the number of other possible classifications, theories in the social sciences can be classified either as positive or normative (e.g. Jensen, 1983, pp. 319-320; Donaldson, 1990a, p. 373). Normative theories are prescriptive and often directed toward accomplishing some objective given certain limitations. Positive theories are explanatory and directed towards providing an explanation for a given phenomenon (Arthurs & Busenitz, 2003, p. 147). As is usual for an economic theory, agency theory is able to function in both ways. It offers insights used in the construction of contracts to guide and influence actions in the real world. At the same time, it represents an attempt to explain observed phenomena in the empirical world (Arrow, 1985, p. 38). However, Donaldson (1990a, p. 374; 1990b, p. 398; 1995, pp. 184-186) has argued that agency theory is too prescriptive and offensive in its advice. He is especially worried about the methods agency theory suggests for curbing possible agent opportunism. According to him, agency theory would be more useful and it would be more easily integrated into traditional organization and management theories, if it focused only on description.

Barney has attempted to answer Donaldson’s critique. According to Barney (1990, p. 387) “much of traditional management theory is strongly prescriptive in flavor”. In this light, agency theory is not, according to Barney, an exception:
Prescriptive statements made in organizational economics also assume that some managerial actions could be changed in ways that serve the interests of the firm. However, the probability of offense from the prescriptive organizational economic analyses . . . seems no greater than the probability of offense from traditional prescriptive management analyses. (Barney, 1990, p. 387, italics in original.)

However, Barney reminds us that the possible consequences of prescriptive statements should lead to caution, until the underlying theories or models are sufficiently developed and tested so that “the results of prescription can be safely anticipated” (Barney, 1990, p. 388). It is also argued that agency theory does not recommend that people act according to the assumptions of the theory; instead, it only studies what can happen when they do behave this way (Petersen, 1993, p. 279).

A third major line of criticism concentrates on the sufficiency of agency theory’s conceptual framework. The framework is considered as being too simple or narrow for a theory. In particular, the issue that agency theory seemingly ignores the existence and influence of the third parties, stakeholders9 or other competing principals outside the agency relationship under examination, has been a very common object for criticism (see e.g. Wilson, 1989, p. 156; Waterman & Meier, 1998, p. 180; Shankman, 1999, p. 332). According to critics, the real world is more complex than agency theory would imply. Agency theory has been also criticized of the narrowness of its focus. It is argued, that in agency relationships, many explanations other than an agent’s self-interest and opportunistic behavior for the failure to deliver high performance exist. For instance, a sincere lack of knowledge, low ability, and insufficient information concerning performance may all explain poor performance as well as the possibility of opportunistic behavior (Davis et al., 1997, pp. 23-24).

The existence of multiple principals and other third parties with conflicting goals is certainly problematic for agency theory, because it examines separately only one of the many agency relationships at a time (Waterman & Meier, 1998, p. 197). However, the meaningfulness of this critique is dependent on how the framework of the theory is understood.

9 ‘Stakeholder’ is defined here as any group or individual, who can affect or is affected by the achievement of the organizations objectives (cf. Freeman, 1984, p. 46).
If it is understood as a realistic or complete coverage of all the possible aspects of empirical reality, this critique certainly has a valid point. However, if agency theory is understood only as incomplete, partial, but still a justified perspective, the situation becomes to some extent different. The proponents of agency theory have argued that one must often sacrifice descriptive accuracy if one is to model a complex reality (Worsham et al., 1997, p. 421). In addition, most of the agency theorists do not seem to suggest that agency relationships in the real world take place in dyadic vacuums, where there third parties never exist. Nevertheless, the lack of ability of agency theory to handle the possible existence of stakeholders or competing principals can indeed be considered to be a clear limitation of the theory.

2.5.4 Criticism of non-profit and public sector applications

Public sector and non-profit applications of the theory have also received criticism. Some part of this critique is parallel to the general critique presented in previous sections, like the simplicity of the theory for complex policymaking environment (e.g. Moe, 1984, p. 773; Koelble, 1996, p. 261; Gerber & Teske, 2000, pp. 875-876). Some part of the critique, on the other hand, has been more intensively focused on the issues of the theory’s applicability to the public sector and non-profit settings. The most usual form of this type of criticism suggests that as an economic theory developed in a private sector environment, agency theory is unfit for public sector and non-profit settings (cf. Broadbent et al., 1996, p. 271). It is also recognized that the theory’s focus on efficiency and accountability aspects is a more distinct and diverse issue in the public and non-profit sectors than it is in the private sector (e.g. Braun, 1993, p. 159; Mayston, 1993, p. 93). This is because the values and goals directing operations are sometimes substantially different in private and non-private organizations.

It is certainly true that agency theory was not originally developed to analyze relationships in the public and non-profit sector settings. It had originally been applied to model profit-making, market-like exchange situations, with a clear understanding about the roles and positions of different principals and agents. However, as discussed earlier, the agency relationship itself can be considered as being universal regardless of
ownership issues and the concrete form of these relationships. In fact, political scientists first applied agency theory to the public sector very soon after it had been applied to economics. Outside economics and political science, agency theory has been attractive for many other disciplines and fields of study precisely because of its alternative assumptions. The informational asymmetries and goal conflicts characterize numerous public and non-profit transactions as well as they do that in private sector (cf. Ferris & Graddy, 1998, p. 230). In fact, some scholars have even argued, “if there is an agency problem in the private sector, it is likely to be worse in the public sector” (Hughes, 2003, p. 12). Although efficiency and accountability can indeed be understood differently in private organizations and the public or non-profit sector, there are also situations where politicians and administrators are really concerned with the economic efficiency and accountability.

The applicability of agency theory to the public sector is also sometimes considered to be more limited because of the difficulties determining who is the principal and who is the agent (e.g. Koelble, 1996, p. 261). Although this observation is true, it is possible to overcome the difficulty by undertaking certain observations. First, determining who is the principal and who is the agent is relatively simple. The principal is the one who (a) appoints someone to undertake tasks and (b) provides the resources for accomplishing these tasks, and (c) monitors the task accomplishment and the use of resources. The agent, on the other hand, can be considered to be the one who performs these tasks and receives the resources provided by the principal. Second, it can be assumed that the principal can simultaneously act as an agent as he acts as a principal. Therefore, a principal of subordinates, say, a head of a public bureau, can act simultaneously as an agent of a politician. However, the theory requires that there is clear division between principals and agents when an agency relationship is under examination. This requires, that (a) the relationship between a politician and the head of a bureau and (b) the relationship between the head of a bureau and his subordinate are examined separately as two separate agency relationships.

Finally, agency theory has also been criticized for being ideological or operating within a political framework. The logic behind this critique is in fact quite close to the general critique concerning the prescriptive nature of the theory. In this type of criticism, agency theory is understood
to be an instrument which helps to promote or to prescribe some specific type of public policy. For instance, according to Broadbent et al. (1996, p. 270), the adoption of agency theory’s logic is “ideological, in that it is intended to create and sustain relations of domination”. Gordon (1995, pp. 54-56), on the other hand, relates agency theory to the “neo-liberal assumptions” and “public choice theory”.

Agency theory as a framework is indeed focused on issues related to control. It is also true that agency theory can be linked to other approaches for analyzing some of the recent public sector reforms, such as privatization, deregulation, contracting out, and more broadly, to the management doctrine of New Public Management (see e.g. Ferris & Graddy, 1998; Lane, 2000; Barzelay, 2001). Agency theory also has much in common with some of the more ideologically oriented approaches, such as the public choice approach (see e.g. Mueller, 2003), since some of its manifestations share some of the assumptions typical in economic theories, namely methodological individualism and rational choice. But considering agency theory as a promoter of a certain form of ideology or as a normative tool for some public policy seems to be misguided, since agency theory neither suggests nor leads to suggestions that normative or ideological solutions for organizing different spheres of public policy should be adopted. On the contrary, it seems that the bureaucratic administration and governance relationships in planned economies can be examined within the principal-agent framework as well as contractual relationships and market transactions. In fact, agency theory has been applied to analyze the planning problems of socialist economies (see Ferrero, 2004).

2.6 Discussion on the insights offered by the theory

The basic setting of agency theory seems to be relatively simple. The theory focuses on a relationship between two or more parties, in which one party identified as the principal engages another party, identified as the agent, to perform a certain task on the behalf of the principal, and it is concerned with analyzing and resolving problems that occur from potential or actual agent opportunism in this relationship. The simplicity of the theory and the universality of agency relationships have made...
agency theory sufficiently generic to allow for its application to different contexts and research settings.

Although the roots of agency theory are deep in the field of economics, scholars of many other disciplines have applied the theory in different contexts by utilizing it in a range of ways. Of course, agency theory is not the only theory which has had a number of different types of applications in different fields of the social sciences. For instance, transaction cost theory has also been applied relatively widely in different contexts and disciplines. General systems theory has also provided an even more generic framework that has been applied to a range of research settings in different disciplines. Nevertheless, agency theory’s applicability to the social sciences has been high when compared with some other theories with an origin in economics. In particular, it would seem that attempts to apply agency theory as a heuristic or illustrative framework for theoretical and empirical studies have been growing.

The universal and generic nature of agency theory has also created problems. In addition to agency theory providing new insights to the disciplines, it has also been transformed by the range of disciplinary contexts (Kiser, 1999, p. 166). Different approaches have led to changes in its basic assumptions and have modified the theory further, sometimes even close to the point where it is difficult to assess, depending on the chosen criteria, whether the theory actually ceases to be a theory called agency theory. Its generic nature has also made the testing of the theory much more difficult and case-specific and context-bound, as the different versions of agency theory have multiplied. Therefore, agency theory in its present form is more like a broad master theory or framework, which even contains many antithetical and schismatic assumptions (cf. Donaldson, 1990a, p. 378). Despite these disruptive elements, different disciplines, contexts, and versions of agency theory have all shared the same basic focus of inquiry: the agency relationship between the principal and the agent.

Although agency theory has been introduced to the field of higher education research by number of scholars, it has not been utilized in any profound or systematic way. There may be various reasons for this, but the outcome has probably been influenced by the general lack of familiarity social scientists have with economic theories. In addition, suspicions about economic theories and some of their negative behavioral
assumptions (e.g. self-interest, opportunism) have presumably reduced scholarly interest in agency theory. However, given the generic nature of agency theory, no reason in principle exists as to why more systematic explorations could not be conducted. The true value of a theory and its applicability to a certain context can be evaluated only after it has been properly applied to this context.

In general, agency theory seems have made its major contribution in its appreciation of the nature of goal conflicts that can arise between principals and agents, informational asymmetries and the potential problems that result from the different forms of agent opportunism, and the governance structures that evolved to contain them. On the other hand, the theory has been criticized, among other things, for being overly negative in its behavior assumptions, for its moral evaluations about people, for being too prescriptive, simple, ideological, and for being non-transferable to public sector and non-profit settings. Although some of the criticisms can be rejected, it is clear that agency theory has caused great disagreement about its assumptions, usefulness and value as a theory.
3 GOVERNMENT-UNIVERSITY RELATIONSHIPS AS AGENCY RELATIONSHIPS: THEORETICAL INSIGHTS

3.1 Definitions and basic assumptions

In order to consider the government-university relationship as an agency relationship in the full meaning of the term, the relationship must contain the following three elements: (a) tasks which the government delegates to a university; (b) resources which government allocates to a university for accomplishing the tasks; and (c), government interest in governing the accomplishment of the tasks. Given the productive purpose of the universities, the tasks are naturally related to producing higher education, i.e. different forms of teaching and research services. Resources for producing these tasks, which take either the form of input- or output-based funding (or both), are allocated to universities before or after the task accomplishment. The governing of the universities’ performance can take place before, during, and after the task accomplishment.

The concrete form of the agency relationship between the government and a university can be hierarchical, contractual, or some combination of these two. In the case of a purely hierarchical relationship, universities are viewed more as public agencies implementing government policies. Hierarchical relationships are characterized as governance by law and regulations. In these relationships, it is the official duty of universities to follow the regulation and perform the tasks allotted to them with the supplied resources (cf. Bleiklie, 1998, p. 305; Gornitzka et al., 1998, p. 35). Defining the contractual relationship is a more complex issue,

10 These tasks may also include the third function of universities, i.e. community service. This study focuses only on the two main tasks of teaching and research, since the contents of different forms of community service are often reducible to the primary functions of education and research.

11 The term ‘governance’ is vague and confusing because it is used as an umbrella concept for a wide variety of different macro and micro level phenomena (see e.g. Pierre & Peters, 2000; Tiihonen, 2004). In this study, the term ‘governance’ and ‘governing’ are used to describe all those purposeful efforts of governments which are intended to guide, steer, control or manage universities (cf. Kooiman, 1993, p. 2).
and there are several ways to understand it. If understood more broadly, the contractual relationship can be viewed as a social contract which emphasizes the government–university relationship as a sort of unwritten and broad mutual agreement on the roles and responsibilities of the government and universities respectively (Gornitzka et al. 2004, p. 88). In this sense, all government funding of universities, regardless of the specifics of the funding process, can represent an implicit contract between a government and a university (cf. Ferris, 1991, p. 13). On the other hand, there has been a growing tendency to understand the concept of contract in narrower terms as a formal, explicit and written economic contract. In this sense, the contract is in more like an exchange agreement that specifies the relationship between the two parties in terms of tasks, processes, outputs and funding (Gornitzka et al., 2004, p. 88).

Agency theory has traditionally understood the enforcement of the agency relationship as internal rather than external enforcement. In internal enforcement, the parties themselves (mainly the principal) enforce the fulfillment of the agency relationship. In external enforcement, the enforcement is carried out by one or more third parties, like the legal system (laws, police, courts) (cf. Noorderhaven, 1992, pp. 234-236). Therefore, the governance of the agency relationship between a government and a university is also examined only from the perspective of internal governance of government.

The parties to the agency relationship, that is, a government and a university, also require more detailed specification. The government, as a principal, can be defined differently depending on the chosen context and perspective. In the broadest sense, government may refer to the whole body of national or regional public institutions performing political or administrative functions. When understood in a narrower sense, government can be viewed as public bureaux or agencies such as ministries, departments or their sub-units operating under the control of some hierarchical superior political actor (e.g. cabinet, minister, president) (cf. Laking, 2005, p. 9). This narrow definition is usually more appropriate, since the operative (and sometimes strategic) governing of universities usually lies within the scope of the national ministry or the department responsible for higher education matters. For this reason, this definition has therefore been adopted in this study also. ‘Government’ here also includes intermediary (or buffer) organizations such as funding or
research councils exercising more or less strict administrative and financial control on behalf of the central government (ministry / department).

A University, as an agent, is considered to be either a public or a non-profit higher education institution, which has identifiable legal, economic and / or socio-cultural boundaries separating it from the boundaries of the government organization.¹² Public universities are funded and owned by public authorities and their legal status is public. Non-profit universities are at least partly publicly funded, but ownership and legal status can be private (i.e. not public). The economic status of public or non-profit universities prohibits them from distributing their possible discretionary resources to shareholders in the form of profit (Brewer et al., 2002, p. 21). In many cases, the distinction between public and non-profit universities may be only slight. Hölttä (1995, p. 181) has argued that “although they are formally a part of the public sector, [public universities] have in practice been given a non-profit status”. Universities typically have a lot of autonomy compared with many other public organizations. In addition, the objective function of both public and non-profit universities can be derived from organizational values of common professional and disciplinary origin. Some of the characteristics of the production processes are similar in both types of universities (Hölttä, 1995, pp. 181-182). The similarities between public and non-profit universities are so profound, that according to Hölttä, “the economic theory of non-profit organizations can be quite directly applied also to public universities in a self-regulative environment” (Hölttä, 1995, p. 182). Universities, their basic units (e.g. schools, faculties, departments and institutes), and their administrative and academic personnel, may act either as sub-systems of the government or as independent institutions that are somehow affected by the government through funding (cf. Kogan & Hanney, 2000, p. 22).

In this research, both the government and universities as organizations are understood from the perspective of methodological individualism. According to this perspective, both the government and universities are aggregations of individual human members and all their organiza-

---

¹² The examination of private, (for-profit, privately owned and managed) universities is restricted outside the scope of this study due to theoretical and empirical meaningfulness.
tional behavior can be reduced to the actions of these individual members. Also, by following the fundamental assumption of agency theory, members of universities are considered to be *self-interested* actors, who may pursue their private goals and interests. This activity is however assumed to be limited by *bounded rationality* in the sense that it prevents the members of the university from seeing all possible contingencies and calculating their optimal behavior in a given situation (Milgrom & Roberts, 1992, p. 596). Therefore in this study it has been assumed that universities, as aggregates of their individual staff members, may find it within their rational self-interest to behave opportunistically. This assumption is not meant to discriminate against university personnel, but it should be considered as a standard assumption of agency theory as applied to universities. Therefore, faculty members and administrators as individuals are not considered (a priori) more or less efficient, honest, hard working, public spirited, and generally worthy of admiration than the members of any other profession or position (cf. Downs, 1967, p. 26).

### 3.2 Informational asymmetries

Information is a key resource in organizational life, because it is a source of power. Controlling the right information, a person or organization can systematically influence in the definition of organizational situations and create patterns of dependency. The way information is filtered, summarized and analyzed also shapes the total view of knowledge that operates as an input for decision-making processes. All organizational power, leadership, and decision-making rely upon information and communication, either explicitly or implicitly, since these processes would be meaningless in the absence of information. By possessing the right information at the right time and by having access to key data, the power relation within and between organizations can be affected. (cf. Hall, 1987, pp. 177-178; Morgan, 1997, pp. 179-181.)

The power relationships attached to the possession of information can be dramatically changed by the changes in information availability. An essential factor affecting information availability is the level of information asymmetry. By simple definition, *information asymmetries*
are “Differences among individuals in their information, especially when this information is relevant to determining an efficient plan or to evaluating individual performance” (Milgrom & Roberts, 1992, p. 600).

From the perspective of agency theory, informational asymmetries exist when the agent possesses some relevant information concerning his type, tasks or actions that the principal does not possess. It is widely accepted by scholars that the production of higher education outputs is surrounded by informational asymmetries (e.g. Ferris, 1991, p. 5; Hölttä, 1995, p. 179; Gornitzka et al., 2004, p. 90). The following aspects characterize at least some of the elements that are likely to influence to the level of informational asymmetries.

3.2.1 Informational asymmetries resulting from work

Academic work is itself inherently surrounded by high information asymmetries starting from its core substance, knowledge. According to Clark (1984, p. 126): “Knowledge is relatively invisible as a material, a product, and especially as a process”. For this reason, “[d]eveloping thoughts, as in research; transmitting thoughts; as in teaching; absorbing thoughts; as in learning – are all difficult to see and evaluate directly at the time they occur” (Clark, 1984, p. 126). Understanding the substance of academic work requires a high level of specified expertise, and it is not easily replaceable. For instance, a medical science professor cannot give lectures in engineering, and a professor of engineering cannot evaluate the research conducted by a professor in the medical sciences. This means that when a university is compared to a normal for-profit firm, the university exhibits less specialization of work activities (assistant professors and full professors do essentially the same things), and more specialization by expertise (e.g. ‘unnecessary’ history professors cannot be assigned to teach accounting when enrolments shift) (Birnbaum, 1988, p. 21).

Some of the informational asymmetries result from the complexities of academic work. Faculty members are expected to perform a variety of roles: those of teacher or lecturer, of researcher or scholar, of academic manager or administrator, or service giver (cf. Becher & Kogan, 1992, p. 109). Teaching is not limited to classroom teaching only. It includes time spent on working with student organizations, formal
classroom instruction, independent instruction, non-credit instruction, advising, counseling and supervising students, mentoring students for courses, graduation and careers, grading papers and exams, preparing courses and developing new curricula. Working on research (basic and applied) may include reading books, collecting and analyzing research data, writing up the results, preparing or reviewing articles or books, attending professional meetings, and seeking private funding for research (Fairweather, 1996, p. 24; Clark, 1987, pp. 70-71; p. 79). In addition, the work of faculty may include administrative tasks, like meetings, personnel seminars, and activities that consist of administrative supervision. In any given week or day, a faculty member may engage in a variety of activities. For example, he may advise several graduate students on their research, counsel several undergraduate students on their study problems, discuss intellectual issues with a colleague, write testimonies or statements to parliamentary committees, give a speech to a local professional society, read professional journals, record data from a laboratory experiment in progress, attend department or program administrative meetings, have lunch with private sector stakeholders, write a chapter in his new monograph, or attend a public lecture (Bowen & Schuster, 1986, pp. 23-24).

The multiplicity of the tasks and the complex nature of these duties make it very difficult to distinguish between the time spent on one task versus another. Often these activities are entwined with each other in mixes that vary minute by minute throughout office hours, and during evenings and weekends as well (Massy, 2003, p. 71). In fact, except for student contact time in the classroom or office, faculty members are subject to very few structured constraints on their time (Gomez-Mejia & Balkin, 1992, pp. 923-924). Indeed, many aspects of academic work are not tied to time or exact location. The blend of academic activities usually includes the blurring of home and office (Clark, 1987, p. 71). If taking this observation to the extreme, it can be said that “People may sit for hours in an office without ever having an idea or being creative, and they may get their best ideas while having lunch with a colleague, walking in the woods, or vacationing in Europe” (Bowen and Schuster, 1986, p. 72).13

13 Although it is also difficult for faculty member themselves to estimate exact distribution time spent on different working tasks, it is not impossible (see Hölttä & Karjalainen, 1997).
Although teaching and research are the primary tasks of universities, institutions have always depended on the work of their administrators (Becher & Kogan, 1992, p. 74). Administrative work includes not only tasks of higher and middle management, but also all those people who have a role that is predominantly administrative in nature. That is, their focus is on either supporting the work of faculty, dealing with students on non-academic matters or working in administrative functions such as finance, human resources, marketing, public relations, business development, student administration, academic administration, information technology, capital or property. (Gornitzka et al., 1998, p. 21; Szekeres, 2004, p. 8.) The primary task of administrators is to administer the university by regulating, supervising, and supporting the main academic tasks of universities (Gornitzka et al., 1998, p. 23). The administration is largely responsible for financial matters and thus it exercises direct authority over departments through budgeting procedures. In addition, administration plays the major role in university’s fundraising, and deciding the total enrollment numbers (Garvin, 1980, p. 41). Administration is also responsible for reporting to government on university performance.

Some of the total informational asymmetries constraining the government result directly from administrative work. As institutions have become larger and more complex, specialized expertise is also needed to accomplish many administrative tasks (Birnbaum, 1988, p. 7). As internal participants of the university, administrators are likely to know more about their own work, and the functioning and operational environment of the university than the government. The work performance of administrators is itself hard to discern and evaluate (Meiners & Staaf, 1995, p. 199) as well as the validity of the information that administrators collect and provide to the government.

3.2.2 Informational asymmetries resulting from organizational complexity

Some of the total informational asymmetries are also affected by the structural complexity of university organization. In general, organizational complexity refers to the degree of differentiation that exists within an organization. This differentiation can be considered according to three dimensions: “horizontal differentiation”, “vertical differentiation”
and “spatial differentiation” (e.g. Robbins, 1990, p. 83). An increase of any of these three factors will increase an organization’s level of complexity. ‘Horizontal differentiation’ concerns the degree of horizontal separation between organizational units and tasks performed by the organization. The larger the number of different tasks and occupations within an organization that require specialized knowledge and skills, the more complex that organization is. This is because diverse orientations and tasks make it more difficult for organizational units to communicate and more difficult for management and administration to coordinate their activities. ‘Vertical differentiation’, on the other hand, refers to the depth of the organizational hierarchy. Vertical differentiation increases, and hence organizational complexity, as the number of hierarchical levels in the organization increases. The more levels that exist between top management and the operational level, the greater is the potential for communication distortion, the more difficult it is to coordinate the decisions of administrative personnel, and the more difficult it is for top administration to oversee the actions of operatives. The third element of complexity, ‘spatial differentiation’, refers to the degree to which the location of an organization’s elements like facilities, tasks, personnel and power are dispersed geographically. The more dispersed the organization is, the more complex that organization is. (Hall, 1987, pp. 60-62; Robbins, 1990, pp. 83-87; cf. Gornitzka et al., 1998, p. 30.)

Universities are complex organizations in the full meaning of the term. According to Birnbaum (2001, p. 194) universities are “complex, non-linear systems, and their responses to changes in one part can have counterintuitive and surprising effects in another”. Compared to other types of organization, universities do not have strongly interdependent parts. In fact, the essential character, structure and purpose of the university is to support the diversity and non-uniformity (Patterson, 2001, p. 168). It is likely that a great part of this complexity results from horizontal, vertical and spatial differentiation.

Horizontal differentiation can be illustrated with reference to a basic characteristic of university organizations: loose coupling (e.g. Weick, 1976; Birnbaum, 1988) The term ‘loose coupling’ refers to connections between organizational elements and subsystems that may be infrequent, circumscribed, weak in their mutual effects, unimportant, or slow to respond (Birnbaum, 1988, p. 38; see also Weick, 1976, p. 3). In fact, the roots of loose coupling can be found in academic work itself. Due to the discipli-
nary substance of academic work, the basic units may live their private lives on campus under the same institutional label, but with very few mutual ties or little need for co-operation. In fact, the connections of basic units to their external stakeholders may be even tighter than their relationship to other basic units of the same institution (Hölttä, 1995, p. 48; p. 53).

The complexities resulting from horizontal differentiation have implications for the level of informational asymmetries. In a loose coupling situation, components of a system affect each other suddenly (rather than continuously), occasionally (rather than constantly), negligibly (rather than significantly), and eventually (rather than immediately) (Weick, 1982, p. 380). The high degree of specialization makes horizontal communication between different fields and disciplines difficult. As a matter of fact, the more highly specialized the departments of a university are, the more difficult it is for their members to communicate about scholarly matters and to find common ground for social integration (Blau, 1973, p. 215; p. 264). According to Hölttä (1995, pp. 48-49), loose coupling makes a government's coordination, steering efforts, and institutional leadership quite complicated, implying that traditional hierarchical methods do not necessarily work in overseeing universities. From the perspective of these observations, it is also likely that the quantity and quality of horizontal information will also be affected accordingly and that this can have a complexity-adding implication to the effects of internal and external monitoring of the basic units.

In addition to horizontal differentiation, the complexity of universities is also increased through vertical differentiation. In universities, typically three basic levels of actor exist (cf. Becher & Kogan, 1992, p. 9; Gornitzka et al., 1998, p. 30):

1. the institutional level represented by the central administration of the university;
2. the basic unit level represented by schools, faculties, departments and institutes;
3. the individual level comprised of individual faculty members and administrators.

14 There has purportedly been a general transition from monodisciplinarity towards interdisciplinarity and transdisciplinarity in universities (see e.g. Gibbons et al., 1994; Geiger, 2006). For this reason, loose-coupling can also take place between these new inter- or transdisciplinary units and structures.
An important element adding complexity and vertical differentiation is the *matrix structure* (Clark, 1983, 1984; Goedegebuure & Westerheijden, 1991; Hölttä, 1995; cf. Sayles, 1976; Alpert, 1985). This refers to the institutional and disciplinary dimensions of both universities and higher education systems. These two dimensions form a matrix-like structure, where the cells are basic units belonging simultaneously to both the institution and the discipline (Clark, 1983, p. 32).\(^{15}\) Both dimensions are highly specialized: basic units to subject matters, and the central administration of the institution to administrative unity. Because of the matrix structure, the faculty has two reference groups to which they owe loyalties: their disciplinary community inside and outside their basic units, and their university in the form of the central administration. Sometimes these loyalties may be in conflict with each other, and in these situations, it has been suggested that it is the discipline rather than the institution that tends to become the dominant force in determining priorities. The importance of the discipline in contrast to the institution can be highlighted by the following argument by Clark (1983, p. 30):

> Despite the common tendency to overlook the importance of the discipline, it can readily be seen as the primary mode. A simple test suggests its power: give the academic worker the choice of leaving the discipline or the institution and he or she will typically leave the institution.

The importance of the disciplinary dimension means that the legitimate power relations where basic units are concerned are more discipline rooted than institution-based. From the perspective of informational asymmetries, this means that the administration which should be responsible for transmitting performance information can neither control the primary performance processes of teaching and research in detail, nor has it exclusive rights and options for monitoring performance effectively (cf. Goedegebuure & Westerheijden, 1991, p. 516). Although it may seem that universities as organizations are relatively flat in terms of their hierarchical structure, the vertical distance is great in terms of

\(^{15}\) In addition to this classical and traditional view, “an evolution toward a matrix structure where each faculty member belongs to a departmental home and on or more integrated [interdisciplinary] research teams” can also be found in universities (Geiger, 2006, p. 428).
loyalty, expertise and information. As was already mentioned, the basic units and especially individuals have the best information regarding production behavior and this information must pass through at least two or three disciplinary and administrative levels, (i.e. department administration, college, school or faculty administration, and the central administration), before it reaches the government. But there are also information asymmetries in the other direction. Usually the central administrators of the university are in a position within the university which allows them to have better information about collective budget decisions involving the whole university (Gornitzka et al., 1998, p. 43). In addition, the administrative and management functions can eventually become so complex that even those academics who are interested in governance may not have the time or expertise to fully understand the processes of decision making or resource acquisition and allocation that are the heart of many governance issues (Birnbaum, 1988, p. 7).

Information asymmetries may also result from *losses of information*. Losses of information may occur at every administrative level. When information is passed forward through different administrative levels, it is usually filtered by judgments and interpretations of what information should be transmitted. In processing specialized information, there is an endemic tendency to portray circumstances as less complex and less uncertain than they truly are. Information has to be simplified and summarized as it is passed upwards, and estimates and interpretations become more rigid. In addition, processed information tends to get treated as more definite and trustworthy than it really is. Also, the fact that information transfers are vertical, - between people on different status levels of the administrative and disciplinary hierarchy – means that there is the potential for intentional distortions of information to occur. ‘Good news’ is more likely to be highlighted whereas ‘bad news’ may somehow get blocked up. Before being sent to the government, performance data may be exaggerated by individual faculty members, basic units and central administrators in ways that reflect favorably on themselves and minimize findings that would reveal their shortcomings. (cf. Downs, 1967, p. 77; Mintzberg, 1983, pp. 184-185; Barnes, 1999, p. 169; p. 172.)

The third form of differentiation adding to university complexity, *spatial differentiation*, is also an inherent element of universities in most
higher education systems. In addition to institutional diversity (i.e. diversity in size, in type or mission, in program profiles, in type of control), there are also responses to changes in the operating environments which can vary according to location (e.g. Dill & Teixeira, 2000, p. 100). It is common for a government to have more than one university in any given location to oversee, and this makes the problem of acquiring information about the university’s behavior even more troublesome and costly (Gornitzka et al., 2004, p. 90). In addition, many universities have one or more side-campuses or basic units that are located in a different geographical location, distant from the main campus. Sometimes this distance can be very great, and it may even cross national or continental borders. Even though the recent development of information and communication technologies has improved the general ability to retrieve and pass information irrespective of geographical distance, the differences in operating environments can vary greatly in different universities or their side-campuses.

3.2.3 Informational asymmetries resulting from complex production technology

Informational asymmetries are also high because of the complexities in production technology of universities. In performing its tasks set by the government, a university engages in productive activity. The production processes of university organizations can be described through the concepts of production theory (a.k.a. the input-output approach). The purpose of production theory is to investigate the way in which inputs are transformed into outputs. In a simplified theoretical model, a production unit such as a firm or other organization is assumed to produce a single homogenous product and that this can be achieved in various ways depending upon the production technology chosen. In the terms of production theory, a university as an organization is expected to transform inputs through its production technology into teaching and research outputs. The inputs can be categorized as human, financial, or physical resources. Human resources are the time and effort put in by university staff and students. Financial resources are the monetary income and property of the university, whereas physical resources are comprised of e.g. the buildings, land, equipment, and consumables. The quantity and quality of outputs produced will be determined by the amounts and
kinds of resources used, and by the way they are used (e.g. Bowen, 1977, pp. 10-11; Johnes & Taylor, 1990, pp. 50-60; Cave et al., 1997, pp. 25-26.)

In general, the production technology of universities is quite complex. As production units, universities use more than one type of input to produce more than one type of output. (Johnes & Taylor, 1990, pp. 50-52; Cave et al., 1997, p. 25.) In economic terms, universities are ‘multi-product firms / organizations’, characterized by joint production of various teaching and research outputs so that different activities are dependent on each other (Garvin, 1980, p. 40; Hölttä, 1995, p. 162).

The first element adding complexity to production technology is that teaching and research outputs are quite different and there is no obvious way of adding them together (Johnes & Taylor, 1990, p. 51; Cave et al., 1997, p. 120). In the case of private firms, output is valued by markets and it can be measured simply in terms of monetary units, such as total sales or value added (Johnes & Taylor, 1990, p. 51). This is not possible in the university sector, partly because of information asymmetries. The nature of teaching or research outputs prevents the establishment of efficient output markets where supply and demand interact and where prices reflect production costs, quality and scarcity (Jongbloed & Vossensteyn, 2001, p. 129). For instance, the quality of teaching outputs is difficult to measure and evaluate. In simply stated terms, higher education teaching is an ‘experience good’, the quality of which can be judged only after it is consumed (e.g. Clotfelter, 1996, p. 28; Canton & Venniker, 2001, p. 41; Jongbloed, 2003, p. 125).

The second element adding complexity is that universities use multiple inputs to produce more than one output. Unlike for-profit firms, uni-

---

16 In principle, it is assumed that without government intervention, informational asymmetries would lead to a market failure, where the universities would collect higher fees and subsequently provide insufficient teaching (or research) quality. This behavior would again decrease the demand for higher education outputs and lead to under-investment to the teaching and research. It is somewhat ironic that the same informational asymmetries which prevent the efficient use of markets as a disciplining and coordinating method also constrain the (hierarchical) governance of the government (cf. de Boer 2002, p. 45). In addition, the increased or total absence of market information (prices) makes it even more difficult for government to determine whether universities are operating at minimum or even reasonable cost. This is practically what can be called as ‘chicken-egg problem’: Exactly the same informational asymmetries which can cause the ‘market failure’ can also cause the ‘government failure’. The public governance, funding or ownership of universities do not decrease in any way informational asymmetries or the problems that are related to it.
Universities are economically one-sided rather than two-sided. This means that universities face input markets where they buy the resources they need to produce their outputs, but they face weaker or no economic markets on the output side. Therefore, universities have no direct way of evaluating their outputs in the relation to the costs of the inputs used to make them (cf. Downs, 1967, pp. 29-30). In addition, there is no unambiguous or exclusive way of attributing specific inputs to specific outputs. Because of the interdependence of the input variables and that of the outputs of academic production, defining and measuring faculty time spent on different functions would be more or less arbitrary. For instance, time spent on reading articles and books for research purposes often provide useful input into teaching; and teaching (particularly the teaching of graduate students) may also provide valuable feedback effects on research.

Further, it is argued that the production processes of universities are quite flexible and adjustable to different economic circumstances. The faculty’s time can be easily divided in different ways among institutional activities, and class size and teaching methods can be adjusted quite freely to correspond to economic constraints. Because of the joint nature of higher education products and the interdependence of resources, the internal modification of production technology is relatively easy to accomplish inside institutions, but it is extremely difficult to control externally (Hölttä, 1995, p. 162; p. 189). For this reason, it is very difficult for governments to know the true difference between the allocated funding and the actual minimum costs of delivering the desired level (quality and quantity) of teaching or research output.

The third and the last element increasing the complexities in production technology is that these technologies are not unitary but in many respects they differ greatly between disciplines. For instance, the teaching and research in theoretical philosophy and theology is produced quite differently from the teaching and research in chemistry or biology. Differences can be found in facilities (class-rooms / laboratories), major equipment (books / microscopes), and teaching, study, and research methods, etc. Different disciplines produce different teaching and research outputs and they employ different types and amounts of input to produce those outputs.
3.3 Goal conflicts

The definitions of individual and organizational goals have been controversial and complex issues in the study of organizations. The importance of goals lies in their presumed effect on individual and group behavior. Nevertheless, according to Scott (2003, p. 292), “[t]he concept of organizational goals is among the most slippery and treacherous of all those employed by organizational analysts”. Despite the challenges, some attempts to define goals have been made. For instance, goals have been understood as “projections of what an organization wants to accomplish, produce, or reach” (Bolman & Deal, 1984, p. 34) and as “desired ends . . . that participants attempt to achieve” (Scott, 2003, p. 22). Organizational goals have been defined as “a state of affairs which the organization is attempting to realize” (Etzioni, 1961, p. 71) or as “intended future domains for the organization” (Thompson, 2003, p. 127, italics in the original).

From the perspective of methodological individualism, the existence of organizational goals does not suggest that an organization would have a real personality or any collective life of its own independent from its individual members: organizational goals are creations of individuals, singly or collectively (Hall, 1987, p. 270; Milgrom & Roberts, 1992, p. 21). In practice, most people understand very clearly that when we speak of the goals of the university, we are in fact referring to the goals of that particular group of people who are in the positions of influence within the university (Allen, 1988, p. 10). However, the definition of the goals of the university has been a very controversial issue. This is because goal ambiguity is an essential feature of academic organizations (e.g. Baldridge, 1983, p. 39; McKelvie, 1986, p. 151; Patterson, 2001, p. 162) that often operate on the basis of a variety of inconsistent, mutually conflicting and ill-defined preferences. The complexity of universities’ goals may result from two specific reasons, first, because universities have a multiplicity of missions, and second, because no one has absolute authority within the university organization (cf. Allen, 1988, pp. 25-26).  

17 In many respects, universities as organizations contain elements from “organized anarchies”. This is because universities often have problematic goals and fluid participation in addition to their unclear production technology (Cohen et al., 1972, p. 1; Birnbaum, 1988, p. 155).
The various constituencies and interest groups, such as faculty, administration, students, government, donors, alumni and private research financiers, hold different, sometimes opposing views on university goals and priorities, both within and between the groups (Patterson, 2001, p. 162). But even the sharing of some goals does not necessarily mean that people agree either on which goals should be optimized or on how to optimize them (Birnbaum, 1988, p. 62).¹⁸

One of the most common approaches has been in to make the distinction between ‘official’ (or ‘overt’) goals and ‘operative’ (or ‘covert’) goals (e.g. Perrow, 1961, p. 855; Hall, 1987, p. 271; Patterson, 2001, pp. 161-162; cf. Gross, 1969, pp. 284-286). **Official goals** are usually explicitly manifested in written form (e.g. strategy, annual reports, mission statements) but also in non-written form (e.g. public speeches, statements and pronouncements). Official goals are often vague and general in their nature on purpose and they are influenced strongly by standards of social desirability (Perrow, 1961, p. 855; Robbins, 1990, p. 55). Official goals may help to give meaning to the general character of the university. They can act as integrating myths; they can be good for morale and can help keep external groups, such as the government, pacified. But to expect such statements to really guide choices and guide university behavior is another thing, since they hardly provide a clue of what the universities really do (Clark, 1983, p. 25). Instead, the other type of goals, **operative goals**, designates the ends sought through the actual operating policies of the organization. They are more implicit and informal than official goals, and they can usually be perceived by observing what the person or organization is actually doing, i.e. how the time is spent and how the resources are allocated (Perrow, 1961, p. 855; Conrad, 1974, p. 506).

### 3.3.1 Conflicts in official goals

During the last two decades great changes have emerged in governments’ interactions with and expectations of universities. Both the massification of higher education systems and limitations in the availability of public funds have forced governments to redefine these relationships by pressuring universities to become more accountable in their use of

¹⁸ More on intra-organizational goal conflicts see e.g. Pondy (1967) and Rainey (2003).
publicly generated resources, and by expecting universities to do more at a lower cost. In fact, it has become a virtual iron law internationally that governments will not support mass higher education at the same unit-cost level as they did for previous elite arrangements (Clark, 1998, p. 130). Governments have also demanded that universities become more responsive to the national and regional economic needs in transforming their traditional economic structures to fit high performance, technology-based economies. Increasing national or regional investments to produce a highly skilled workforce has been seen as a vital element for future economic growth. (Alexander, 2000, pp. 411-412; p. 415; Harvey & Askling, 2003, p. 74.)

Because of these and other changes, many governments have started to place special attention on the economic, efficient and effective use for the public resources (Cave et al., 1997, p. 3). Economic use of resources refers to the situation where a university produces the given amount of teaching and research outputs at the lowest possible cost (economic efficiency). Efficiency, more precisely technical efficiency is judged to influence the ratio of outputs and inputs (e.g. Bowen, 1980, p. 168; Berman, 1998, p. 6). Being technically efficient means that a university cannot produce more teaching or research output with its existing inputs without reducing effectiveness / quality (Abbott & Doucouliagos, 2003, p. 91). The government’s requirements for effectiveness can be simply translated to say that the government expects universities to be ‘doing the right things’. It refers to success in achieving the government’s objectives or to the level of accomplishing some outputs or outcomes (Hüfner, 1991, p. 51; Jones & Pendlebury, 1992, p. 5; Berman, 1998, pp. 5-6).

Effectiveness can be connected to the quality of teaching and research outputs as well as their capacity to produce desired effects in their environment. Defining quality in the context of higher education is very complex issue, both because of the complex nature of higher education, and because of the complexities in defining the concept of quality itself. Accordingly, there are basically two types of conception of quality in higher education: objectivist and relativist. In short, the objectivist conception assumes that it is possible to identify and to qualify certain aspects of higher education, and that the same assessment can be applied to all relevant circumstances. According to the relativist conception, there is no objective, definitive and final description of quality. The as-
essment of what is or what is not good quality depends upon the objectives and criteria of a person, a group or an organization that is making judgments in a specific context. In this sense there are as many qualities of higher education as there are sets of goals and criteria that can be related to higher education (Barnett, 1992, pp. 45-50; van Vught, 1995, pp. 196-197). From the perspective of the general setting of agency theory, the relativist conception is more appropriate, since it is more theoretically generalizable. Therefore, good quality can be understood simply as a “fitness for purpose” (van Vught, 1995, p. 197, quoting Ball, 1985) – that is – fitness for the government’s purposes. This means that the quality of universities’ processes and products can be judged in terms of the extent to which they meet the government’s goals for the tasks – what ever they may be in particular situations.

Despite the plurality of goals within universities, the government’s goals are not usually the same ideals and goals which many universities and most individual faculty members would prefer to pursue. Reduced public spending on the university sector has lent wings to academic concerns about the fate of fundamental and traditional values of higher education. As their official goal, many faculty members would prefer to see universities as social and cultural institutions, ideals close to 19th century German universities and the ideas of Wilhelm von Humboldt. According to faculty’s point of view, the main purpose of the universities ought to be to concentrate on academic activities based on academic freedom. The primary mission of the university should be to search for knowledge for the sake of knowledge itself (Bleiklie, 1998, p. 301). According to extreme humboldtian views, the only purpose of government involvement should be restricted to fulfilling all the financial needs of universities and in securing the freedom of research and teaching (cf. Gornitzka & Maassen, 2000, pp. 269-270).

Regarding the general arguments concerning government involvement in university affairs, there seems to be a goal conflict between the cultural arguments of universities and the utilitarian arguments of government (cf. Bleiklie, 1998, p. 299). The former has traditionally argued that scholarly and academic activities are emancipating forces in the development of open and tolerant societies. The latter has emphasized that universities, whether they are understood as ‘bureaux’, ‘corporations’ or ‘industry’, exist mainly to provide society with qualified labor,
knowledge and research products that contribute to national economic growth (cf. Bleiklie, 1998, pp. 299-300; Schmidtlein, 2004, p. 264). The goal conflict resulting from the clash of cultural and utilitarian goal conceptions can essentially be crystallized by the confrontation between the utilitarian claims for accountability and cultural emphasis on academic freedom and institutional autonomy. From the cultural perspective, it is believed that stronger accountability to government weakens the autonomy of the institutions. Therefore, where more accountability is required, less institutional autonomy remains (Berdahl, 1990, p. 171; Trow, 1996, p. 312). Governments’ demands for accountability are also believed to threaten academic freedom by restraining the ability of faculty to manage their own time and define their own work (cf. Trow, 1996, p. 312).

In general, the concept of accountability has been defined in several quite similar ways. According to Kogan’s (1986) classical definition, accountability is “a condition in which individual role holders are liable to review and the application of sanctions if their actions fail to satisfy those with whom they are in an accountability relationship” (p. 25, italics in original). Hüfner (1991, p. 48) sees accountability as “the responsibility to demonstrate the achievement of certain ends by employing the most efficient means”. Accountability is also considered as a “requirement to demonstrate responsible actions to one or more external constituencies” (van Vught, 1994, p. 355), or “the obligation to report to others, to explain, to justify, to answer questions about how resources have been used, and to what effect” (Trow, 1996, p. 310). Essential questions with respect to accountability are the following: who is to be held accountable, for what, to whom, and through what means? (Trow, 1996, p. 310; Huisman & Currie, 2004, p. 530). Trow (1996) has also made important distinctions between the different dimensions or aspects of accountability in higher education. One of them is the distinction between legal and financial accountability on one side, and academic accountability on the other. Legal and financial accountability is the obligation of universities to report how government-provided resources have been used. This side of accountability clarifies whether the university is doing what is required of it by law, and whether its resources are being consumed for the purposes for which they were provided. Academic accountability, on the other hand, is the obligation to demonstrate that operational expecta-
tions are being met. This side of accountability answers the questions about what has been done to further teaching and research, and to what effect. (Trow, 1996, p. 316.)

The concept of academic freedom usually refers to the freedom of individual academics to study, teach, research and publish without being either subject to or to cause undue interference (e.g. Tight, 1988, p. 132; Caston, 1992, p. 1295). More broadly, academic freedom is the freedom of academics to think and act within a particular higher education institution, within the higher education system, and within and between national societies. It is also a situation in which individual academics may act without consequences that could do damage to their status, their employment in academic institutions, or their civil condition (Shils, 1991, pp. 1-2). Holding academic freedom as a goal is very deeply rooted in the culture of the academic profession across all disciplinary boundaries. According to Clark (1983, p. 94) it is one of the most central “banners under which the profession marches, the intensively held myths that pull academic people together and turn them often into a unified fighting force”.

Institutional autonomy, on the other hand, can be understood as the freedom of a university functioning collectively to make its own decisions on matters of teaching and research (Caston, 1992, p. 1295). It also refers to the belief that universities should be left alone to determine their own goals and priorities, and to put these in to practice, if they are best to serve society as a whole (Tight, 1992, p. 1384). Institutional autonomy is valued very highly among universities, and therefore universities always wish to declare their autonomy (Frazer, 1997, p. 350). Traditionally, institutional autonomy has been divided into two different dimensions: substantive autonomy and procedural autonomy (Berdahl, 1990). Substantive autonomy is considered to be the ‘what?’ of academe; it is the power of the university to determine its goals and programs. Procedural autonomy, on the other hand, is considered to be the ‘how?’ of academe; it is the power of the university to determine the means by which its goals and programs will be pursued (Berdahl, 1990, pp. 171-172). Academic freedom and institutional autonomy are not synonymous or inseparable although they can be very closely interrelated. The principal distinction between these two concepts is that academic freedom relates to individual faculty members, whereas institutional autonomy relates to universities, their employers. The existence
of institutional autonomy does not necessarily guarantee the existence of academic freedom, and a university which is not autonomous might still be able to safeguard academic freedom (Ashby, 1966, pp. 290-293; Tight, 1988, pp. 122-123; Berdahl, 1990, p. 172).

The emergence of various accountability mechanisms has been interpreted as a signal of lack of trust in the academic work and the functioning of universities (Gornitzka et al., 2004, pp. 87-89; Schmidtlein, 2004, p. 264). Modern day governments, usually representing a large proportion of the different actors of society, seemingly cannot just trust the universities without requiring some formal verification that they will fulfill their obligations for the public resources they have received. As was implied in the introductory chapter of this study, the demand for different forms of accountability is directly related to governments being afraid of inefficient and ineffective use of public resources (Cave et al., 1997, pp. 2-3). It means that the governments suspect that without accountability verification, universities will produce fewer outputs or lower quality outputs with a given set of publicly funded inputs than they could produce if accountability was not verified.

Traditionally academics (especially tenured faculty) have had exclusive authority over their own work and they demand self-regulation without administrative interference. These claims for professional autonomy and self-regulation create potential conflicts with governmental bureaucracy (cf. Blau, 1973, p. 159). From the perspective of universities and individual faculty members, verifying accountability could lead to infringements of academic freedom and institutional autonomy. According to Berdahl (1990, p. 172), interventions in the substantive autonomy tend to be far more worrying from the academic perspective than those which are restricted only to procedural matters:

[I]n exploring autonomy issues it is helpful to know whether the government is intervening in procedural or substantive matters. The former (e.g. pre-audits, controls over purchasing, personnel, some aspects of capital construction) can be an enormous bother to academe, and often even counter-productive to efficiency, but still usually do not prevent universities or colleges from ultimately achieving their goals. In contrast, governmental actions that affect substantive goals affect the heart of academe.
The rise of the “Evaluative State” (Neave, 1988; 1998) and the government emphasis on economy, efficiency, and effectiveness have initiated a process of government withdrawal from close and detailed process oversight that was seen to be threatening mainly procedural autonomy of universities. This transfer from “process control” to “product control” has shifted the focus away from process-controlling actions like regulating and shaping the curriculum and the disciplinary profile. Instead, governments have started to place emphasis on the quantity and quality of the products, that is, teaching and research outputs. Yet the decrease in process control has not necessarily meant a net increase in institutional autonomy (Neave & van Vught, 1991, pp. 251-252). Instead, it has meant that the increased demand for financial and academic accountability has extended the extent of government interference to issues close to the sphere of academic freedom and substantive autonomy. The government-driven evaluations of academic programs, quality considerations, course content, and faculty evaluations have previously also been considered to be too close to the heart of academe to be subjected to normal accountability measures (cf. Berdahl & McConnell, 1999, pp. 76-77). The following quotation from Gumport (2000, p. 69) characterizes this issue in the following way:

[T]he contemporary accountability climate has in effect squeezed public higher education into a vise, even as various legislative and state actors have taken it upon themselves to dissect the enterprise, inspecting slices of academic life/work/teaching/learning under a microscope. The assessment paradigm has an apparently unlimited reach, imposing an organizational and individual performance metric on every aspect of higher education with profound consequences for the academic workplace . . .

Indeed, higher levels of procedural autonomy and reduced process control seem to be produced largely by lower levels of autonomy especially in success and good performance in the domain of product control. In fact, it is claimed that autonomy in exercising process control is dependent on fulfilling the norms stipulated in the domain of product control (Neave & van Vught, 1991, pp. 251-252.) This is highlighted in the following kinds of arguments:
These imperatives bearing down on higher education, combined with the new subordination and dependence of process control to product control, provide governments with a particularly strong leverage to assert societal needs over those arising primarily out of internal evolution of the disciplines or out of the individual needs for personal development or of unrestricted enquiry, all of which are determined internally within the institution by those who create and those who consume, knowledge. The subordination of product to process control [sic], plus the evaluative mechanisms put in place to uphold this relationship, carries with it the not inconsiderable danger of higher education becoming separate from its more traditional and fundamental values. (Neave & van Vught, 1991, p. 253.)

Rather than being neutral measuring tools providing information about ‘outputs’ or ‘outcomes’, calculative practices govern. They disrupt established patterns of institutional organization and individual behavior. The emerging processes have new content, influenced by new imaginings of outcomes, and new strategies for assembling people and resources to achieve new ends. (Larner & Le Heron, 2005, p. 846.)

In addition, one implication of attitudes towards this type of development can be manifested in the so-called ‘publish or perish’ -slogan. It is usually related to situations where the possibility of upward career mobility, salary increment and tenure are dependent to a great extent on demonstrating accountability with research output and publications (see e.g. Mwamwenda, 1994).¹⁹ Many faculty members feel that the mandatory necessity to publish creates too much mental pressure on them and limits their academic creativity. The effects of the demands of accountability are considered to limit procedural and substantive autonomy of the whole institution, but also academic freedom. Some faculty members feel that mutual competition of institutions and individual faculty members is a “game” and that those who do not “play”

¹⁹ The pressure to publish naturally varies by the types of higher education institutions. For instance, this pressure is considerably lower in small regional universities and community colleges than it is in larger research universities operating in national and international spheres.
this new game are in danger of being “threatened, coerced, censured
and, ultimately, penalized” (Larner & Le Heron, 2005, p. 850).

3.3.2 Conflicts in operative goals

Behind the visible goal conflict, there also exists more hidden goal con-
flict, usually disregarded in the public discussion and rhetoric. What a
university or faculty members state publicly as their official goals do
not necessarily reflect the university’s or faculty members’ actual, op-
erative goals. Sometimes official goals may rank high as intentions, but
will be evident only to a lesser extent in the actions of the university.
On the other hand, the operative goals of institutions and individual
faculty members are ranked low as explicit intentions, but are much
in evidence in the actions of the organization and of the individuals.
Members of the university may be unaware of these covert goals, be
ashamed of them, or be unwilling to talk about them. The latter two re-
actions can be presumed if the operative goals are related mainly to the
private interests of individuals. (cf. Gross 1969, p. 286; Robbins, 1990,
p. 55.) In addition to the sincere fears of losing academic freedom and
institutional autonomy, private but hidden goals may also play a part in
the general university and faculty dislike for the government’s account-
ability demands. Demonstrating efficiency and effectiveness in their ac-
tivities will almost certainly make their covert goals more difficult to
achieve.

Some of the most important of these operative goals relate to obtain-
ing institutional and personal prestige (e.g. Breneman, 1970, p. 35; Garvin,
1980, p. 22; James, 1990, p. 82; Brewer et al., 2002). Prestige is essentially a
reputational measure, a measure of professional reputation - what one’s
colleagues and peers think of one’s institution or department (Breneman,
1970, pp. 35-36; Gross & Grambsch, 1974, p. 100). When evaluating the
rate of the goal conflict or congruence with this goal, the following ques-
tions are likely to emerge from a utilitarian viewpoint of government: is
pursuing prestige also a socially worthwhile goal and does it encourage
higher education to concentrate on the most socially worthwhile activi-
ties? Does the competition for prestige entice more productive people
into the academic arena and create incentives for greater effort and pro-
ductivity? (James, 1990, p. 105.)
It is likely that governments do not want to reward prestige itself, especially when it does not gauge or reflect the quality of teaching and research. This is quite possible, since prestige may differ from quality (however determined). For instance, a university may produce high quality research outputs, but it may simultaneously possess a low level of prestige. Vice versa, although high quality is expected to be correlated with high prestige, possession of high prestige does not automatically mean possession of high quality. This means that old and prestigious research universities do not necessarily possess high standards of teaching quality (e.g. Willner, 1999, pp. 269-270; Brewer et al., 2002, p. 147). In fact, for many of the academics and institutions, high prestige is more important than high quality, because prestige is more directly related to their reputation and valuation (cf. Gross & Grambsch, 1974, pp. 100-101; Garvin, 1980, p. 15). Therefore, high prestige is basically a high “reputation for excellence” (Garvin, 1980, p. 15), and from the government perspective, it is not itself a sufficient indicator of high quality of instruction or research.20

In addition to pursuing prestige, other covert goals that are in conflict with government goals are likely to exist. One could argue that presenting idealistic values related to the cultural conception as official goals has in fact become an effective and recurrent political strategy to preserve the financial status quo of the universities. Universities and faculty members have also promoted academic freedom and institutional autonomy by creating noble and esoteric public self-images. However, this behavior also has negative consequences. For instance Shils (1991, p. 16) has suggested that the real value of academic freedom may have been depreciated by constant references to it:

Academic freedom is in danger of becoming an object of lip-service to which every one alleges to subscribe without thinking of what it really entails. It has come, in some academic circles, to be used to justify any action, academic,
political, personal, etc., in which academics may at any moment wish to engage. They do not see that academic freedom is primarily the freedom to do serious academic things without obstructions imposed with other intentions in mind.

In extreme cases, the official goals related to the principles of academic freedom and institutional autonomy may also serve as sentimental ‘hobby-horses’ created for the purpose of justifying more self-interested operative goals: an official goal like ‘free knowledge seeking for the sake of the knowledge’ definitely sounds much better than the possible covert goals such as ‘pursuing prestige, influence, revenue and leisure’. Indeed, for universities and individual faculty members, it is very important to secure the political acceptance of the tax paying society. This acceptance becomes even more important when constantly rising levels of expenditure on higher education are starting to erode public trust (see e.g. Massy, 2003, pp. 3-6).

3.4 The problem of adverse selection

As it was introduced, the agency problem of adverse selection addresses the problems that arise because of information asymmetries occurring before the principal enters into an agency relationship with the agent. Informational asymmetries related to the adverse selection problem are concerned with the principal’s uncertainty regarding the prospective agent’s true type. Private information together with self-interest may create incentives for an agent to misrepresent himself opportunistically as something that in reality he is not. By acting so, the agent tries to obtain a more favorable position when negotiating with the principal. An adverse selection problem has materialized when the deceived principal chooses an agent who is not in reality the type that the principal would have preferred. (cf. Barney & Ouchi, 1986, pp. 439-440.)

In government-university relationships, the problem of adverse selection may become active in situations where the government and universities are considering or negotiating to enter into task agreements or contracts of some kind. This process involves the government defining the task that it needs to have provided and the conditions that are
to govern the prospective agency relationship. In these situations, universities might have to compete against each other for scarce governmental funding. In order to gain resources, they may be tempted to act opportunistically by deliberately distorting the information about their true type. The type of the university is basically defined by the willingness and capacity of the university to accomplish the prospective tasks.

The *willingness* aspect could be determined as the true motivation level inside the university in order for it to accomplish the tasks it is bidding for. It can be presumed that the nature and rate of goal conflict will have at least some effect in determining the level of motivation in universities; a high level of official and operative goal conflicts between the government and the university is likely to decrease the task accomplishment motivation level. The *capacity* aspect, on the other hand, could be related to determining the potential of productive qualities of the university. Taken together, the willingness and capacity aspects basically determine how efficient and effective a university would be in producing the tasks to be agreed on.

Because of the potential goal conflicts and informational asymmetries resulting from academic and administrative work, organizational structures and complex production technology, the contracting government is not likely to have complete information when judging either the willingness or capacity of different bidding universities. It is therefore possible that the contracting government will not be able to select the best university able to accomplish the tasks. For example, when negotiating on performance agreements, making funding decisions about basic teaching and research funding, or making allocation decision of project or program funding, the government is forced more or less to depend on information provided by the universities themselves. Especially in the context of financial stringency, faculty and administrators may have a tendency to exaggerate the true willingness and capabilities of their own university while simultaneously attempting to minimize any unfavorable information that could prevent the assignment (cf. Downs, 1967, p. 123).

The problem of adverse selection can appear in government-university relationships which are either hierarchical or contractual. The main difference between these two is that hierarchical relationships are more based on (government) authority whereas contractual arrangements
are more based on mutual exchange (cf. Lindblom, 1977). It seems that the problem of adverse selection in its purest form applies better to exchange-based contractual relationships. In hierarchical relationships, the government has more power to alter the terms of the tasks, the compensation to be paid for it, and governance of the tasks more freely, because universities may not have real ‘exit’ option. However, in contractual arrangements, if the universities do not like the terms of a contract offered by a government, they usually have the option to decline the government offer and withdraw their interest in producing the tasks. If a limited number of universities compete for government funding, the universities can become the dominating party, compelling the government to adopt more acceptable forms of contracting. However, in situations where there are many universities competing for government funding, the government is able to dominate and thus is able to define the conditions of contracts.

As was discussed in section 2.3.1, the likelihood of an adverse selection problem may be reduced with the mechanisms known as signaling and screening. The term screening refers to those activities undertaken by the principal which are intended to separate good types of prospective agents from bad types of prospective agents. In signaling, agents themselves make the first move by voluntarily revealing private information about their willingness and capacity to perform the tasks to be agreed on.

By definition, all those government activities that are intended to reduce informational asymmetries before the task assignment can be considered to be screening procedures. The government may start its screening procedures by using some sort of shortlisting of the most eligible universities against some preferred but broad screening standard. After the shortlisting phase, the government may attempt to start screening the capabilities and willingness of shortlisted universities. The capability aspects of different universities can be screened e.g. by investigating the universities’ preparedness production technology (e.g. checking the adequacy of teaching / research equipment and facilities), production processes (e.g. existing internal quality assurance systems of teaching and research, results of external quality assessment, faculty-student ratio), and financial information (e.g. financial stability, total budget size and allocations, average costs per selected cost measure).
Also, reputational aspects can be screened by determining the views of external stakeholders’ on particular universities (e.g. industry, donors). The willingness aspects, i.e. the true motivation level inside the university, can be screened through an investigation of the opinions of internal stakeholders (students and staff), an examination of the actual or potential of goal conflicts\textsuperscript{21}, and an analysis of earlier experiences of task accomplishments. Nevertheless, because of the permanent and persistent nature of informational asymmetries, even the most active government’s efforts to verify the correctness and accuracy of information will usually depend on universities’ willingness to provide true and objective information. (cf. Vroeijenstijn, 1995, p. 50; Kumaraswamy, 1996, pp. 273-275.)

Screening is most likely to be an efficient solution to adverse selection problems when the costs for the government to obtain information about the types of bidding universities are relatively low. Even though organizing screening procedures can be very costly and time consuming, screening would still be the best solution if the consequences of a hiring low quality university could be even more costly to the government. If it is technically possible, a shortlisting procedure as a form of pre-screening would minimize costs by saving on the higher costs which would be incurred by a deeper screening of all bidding universities. Further, it would encourage confident bidding by those shortlisted universities which were truly willing and capable of completing the tasks required.

Another way for universities to reduce ex-ante informational asymmetries is through signaling behavior. Signaling behavior includes all those actions where, on its own initiative, a university reveals private information to the government about its capacity and willingness to accomplish the tasks it is bidding on. This behavior may include all those elements that are part of the government’s screening procedures. The main problem with signaling is the reliability of the signals. Because of the informational asymmetries, the government may not be able to detect untruthful signals from truthful ones at a reasonable cost. This may lead to previously mentioned Akerlof’s (1970) “Market for Lemons” where the behavior of opportunistic universities will eventually drive out the good type of universities, or at least make them behave oppor-

\textsuperscript{21} The differences in goal conflict levels are discussed further in section 3.6.3.
tunistically. The reason for this assumption is that if ‘lemon’ universities can misrepresent their type so opportunistically, the honest, the good type of universities may not be able to bid competitively. For instance, a bad type of university might make a false offer in which it undertakes to produce a higher number of master’s degree graduates for a given level of resources, in excess of the government’s demands. A university of a good type, which actually could produce the agreed number of master’s degrees with given resources, but not more, is likely to lose the competition to the ‘lemon’ university unless it also starts to behave opportunistically.

3.5 The problem of moral hazard

Whereas adverse selection is pre-contractual opportunism that exploits informational asymmetries about future performance, moral hazard is post-contractual opportunism that exploits informational asymmetries about current performance (Barney & Ouchi, 1986, p. 440). As was discussed in section 2.3.2, moral hazard opportunism involves shirking or forms of behavior which are preferred by the agent, but are not in the best interests of the principal. Moral hazard behavior by an agent also includes those actions by which the agent’s self-interest leads to reluctance in sharing the information with the principal, or even worse, motivates the agent to send wrong information to the principal.

Basically every action and effort of a university could turn into a form of moral hazard behavior when the true reasons behind this behavior are self-interested and not in the best interests of the government. This observation includes the behavior that takes place both at the individual and institutional levels. When it takes place at the individual level, each individual faculty member or administrator attempts to pursue his own utility at the expense of the government. This behavior might occasionally be inconsistent with the goals of their own university, but not always. At the institutional level of opportunism, moral hazard behavior is approved, structured, organized or coordinated by the institution’s decision-making authorities. It is also, of course, always consistent with institutional operative goals.

Based on these assumptions, the following four categories of moral hazard opportunism illustrate some of their possible manifestations.
The purpose of the following sections is not to construct any single and holistic model about the moral hazard behavior of universities. Rather, the objective here is to describe some of the favorable conditions for this behavior to emerge and to give concrete examples of its possible manifestations. The following categories attempt to provide only examples of operationalizations that can be made when the moral hazard setting is brought into the context of government-university relationships. These categories are not necessarily mutually exclusive; some forms of moral hazard behavior classified in one category could also occur in some other.

3.5.1 Shirking

Shirking is a form of opportunistic behavior where agents either do less than expected or where they do not perform the expected kind of action; it is a conscious low work effort in those situations, where the agent possesses high ability to perform the work (cf. Braun, 1993, p. 138). The intensity of shirking may be either passive or aggressive. It is passive when the agent fails to pursue the goals of the principal and it is aggressive if the agent actively engages in actions not in line with the goals of the principal (Lane, 2005, p. 9n). Further, Brehm and Gates (1997) have identified two different types of shirking behavior on the basis of shirking motivation. The first type, called “leisure-shirking” is a form of shirking where the agent is not working because he does not feel like working. The other form of shirking, “dissent-shirking” stems from the agent’s opposition to some policy of his principal. It is an expression of protest: the agent is not working because he is opposed to a particular policy output (Brehm & Gates, 1997, p. 30).

The shirking activity of faculty members and administrators is motivated by their hidden, operative goals and it usually manifests itself as individual, occasional and uncoordinated activity. Concrete examples of shirking behavior are numerous. For instance, one form of aggressive leisure shirking could be a situation where faculty members increase their discretionary time largely at the expense of meeting their institutional responsibilities. Putting minimal effort into teaching and research and more effort into either income generating self-serving endeavors, (e.g. giving private consulting lectures) or leisure activities (e.g. play-
ing golf) are unlikely to serve the interests of either the university or the resource providing government (Gomez-Mejia & Balkin, 1992, p. 924). Instead, developing a personal reputation as an increasingly well-known consultant-speaker is likely to enhance an academic’s levels of income and amenity more than, say, the day-to-day lectures with semi-skilled undergraduate students.

Administrators may also share a goal of freeing up their time from regular work for other kinds of private utility generating activities. For example, they may have incentives to delegate their administrative duties to other parties. An administrator planning on aggressive leisure shirking could try to free his time for, say, internet surfing by trying to get junior administrators or trainees to do his job (cf. Ortmann & Squire, 2000, p. 381). An example of a form of passive dissent shirking could come in the form of an administrator, who is opposed to some government policy or other, somehow threatening his university or his own administrative position. This administrator could, for instance, practice his silent protest by systematically delaying the implementation process of some government-driven policy. This behavior could involve various kinds of informal and hidden efforts to delay action, to pay lip-service to policy requirements, or to offer incomplete reports and responses. An administrator could, for example, seek to alter the implementation process by trying to renegotiate already agreed terms, secretly redefining its purposes, or otherwise blunting its intended effect (cf. El-Khawas, 1998, p. 320).

Since the likelihood of shirking is tied to intrinsic motivations, one of the most important issues is related to the endogenous incentive structure of the higher education systems that either directly or indirectly either prevents or promotes the appearance of shirking activities (Ferris, 1991, p. 18). One major disputable issue is the behavioral effects related to faculty tenure. If the salaries of tenured faculty members are downwardly inflexible and insensitive to performance, tenure may erode a large proportion of the work incentives. Indeed, under most systems of compensation, a faculty member may have an insufficient economic motivation for improving the efficiency and effectiveness of his teaching. He may have no financial incentives for teaching more students or for teaching more hours a week or teaching during hours which would increase the utilization of facilities or equipment, or to devise new and
more effective techniques for teaching or to make himself available during office hours (Cootner, 1974, pp. 226-227).

Under the security of tenure, it might be predicted that the decisions about what members of faculty do and how they do it will be aimed at making the position of a faculty member as pleasant as possible. With secured salaries, no time clocks to punch, no reports of a faculty member’s own attendance, and almost complete freedom to organize academic instruction as they desire, academic positions are highly esteemed (Buchanan & Devletoglou, 1970, p. 51). Faculty members, especially professors, are required to be present mostly only for their own classes. In addition, they may be under some obligation to attend a couple of hours a week during office hours and to attend administrative meetings. This great flexibility can be considered as a non-pecuniary benefit that comes with the work. This latitude is based on the assumption that people cannot be forced to think or be creative by having the hours of their work controlled.

Another rational reason for the lack of a formal workday is the expectation that faculty can put in a greater effort to undertake research in a location free from casual student or administrative interruption (Cootner, 1974, p. 227; Bowen & Schuster, 1986, p. 72). However, the lack of formality and the discretionary nature of academic work may also tempt faculty members to shirk, since in the academic world, the distinction between work and leisure is inevitably fuzzy (Bowen & Schuster, 1986, p. 72). Indeed, “[c]asual observation suggests” that goal conflicts between universities and their faculty “are not uncommon, particularly for tenured faculty members, who might want to engage in extensive consulting, spend minimal time in the office, and devote their energies to non-academic activities” (Gomez-Mejia & Balkin 1992, p. 948).

The tenure system is an example of linking together goal conflicts and shirking motivation. The most important official rationale for tenure is that it is a protection against infringements of academic freedom and thus helps promote a diverse and lively discourse inside academia and in society (e.g. Ehrenberg, 2002, p. 127; Vedder, 2004, p. 74). Without tenure it is believed that the substance of academic freedom would become narrower, since non-tenured faculty could not act without the fear of disciplinary consequences that could damage their professional status or their employment. Despite its undeniable value and importance
in protecting academic freedom, hidden operative goals to seek some private utility may exist behind the promotion of the tenure system. From an economic perspective, tenured faculty members are similar to other economic producer groups that prefer to secure their lifetime income. For them, tenure is also an effective strategy for enhancing and assuring stable income streams, because under usual practices, tenured faculty members’ salaries are relatively well assured until retirement or death. In addition to its financial benefits, the tenure system also provides an effective labor market barrier for the tenured, thereby reducing the threat of academic and job competition from the side of non-tenured faculty members and newly minted Ph.D.s (Tight, 1988, pp. 126-127; Whicker, 1997, p. 21). Indeed, tenured faculty have the best of the community and corporate worlds – privilege, pay and security without the obligations of obedience within a chain of command (Clotfelter, 1996, p. 24).

A further incentive for shirking related to endogenous incentive structures is related to the level and form of faculty salaries. Indeed, one of the fundamental propositions of faculty life is that at every university, faculty members believe that their salaries are too low (Ehrenberg, 2002, p. 114). Therefore, extra incomes and high levels of job flexibility and security are usually backed by the faculty with the following kind of public rationale: ‘Our pay is so lousy compared to what highly skilled people earn in the business sector, therefore, other kinds of utilities are needed and acceptable as a substitute for the loss of income we sacrifice’ (cf. Wolfe, 2001). A faculty member’s ability to take time off from the university, say, for private consulting may not be seen as negative behavior, but as the only thing that enables him to resist the attraction of offers outside the university (Cootner, 1974, p. 226). Therefore, tenured, already prestige possessing faculty members may end up devoting the minimum effort to academic duties and still face few economic consequences.

22 The following characterization of Vedder (2003, p. 74) illustrates this issue rather provocatively, but in a quite accurate way: “Imagine the supervisor of an assembly line in a widget factory calling aside one of her employees who had worked there for six or so years and saying, ‘John, we like your work. We are giving you a lifetime employment contract. You cannot be fired, demoted, or have your pay reduced, and we will put it in writing. If future bosses try to fire you, you can sue them and win. If you want to work until you are eighty years old, that’s up to you.’”
In the worse case, the flexibility of academic work enables faculty members to run private consulting businesses, to be absent from campus, and to shrink the regular work day from 8 hours to 6 hours, and the working week to as few as 3 days a week. Through private consulting, side-businesses, and other income earning activities, shirking faculty members may achieve the secured independence of an entrepreneur without ever risking their university basic salaries (Whicker, 1997, p. 22). According to Bok (2003, p. 21):

 Officials of the university have very little authority over their senior faculty. The latter have virtually complete license to do as they choose, thanks to the security of tenure buttressed by the safeguards of academic freedom. Since it is difficult to monitor closely the work of highly educated professionals, faculty members can travel more than the university rules allow or remain at home most of the day tending their garden or enjoying their hobbies without much fear of detection. So long as they meet scheduled classes and refrain from criminal acts or other grossly improper behavior, they can stay happily in their jobs until they retire.

Further incentives for shirking can be created if all faculty pay schemes are egalitarian. Egalitarian pay schemes are likely to lead to ‘free rider problems’, i.e. situations where some individuals are paid above the true marginal product, and where some individuals are paid under the true marginal product. This can occur when a shirking faculty member also benefits from the prestige or income simultaneously generated by other working faculty members in his basic unit or even elsewhere at the university (cf. James, 1990, p. 101; Massy & Zemsky, 1994, pp. 2-3). This is because personal prestige is also affected positively through the so called ‘halo effect’, which means that affiliation with a high prestige basic unit, program or university is likely to increase the shirker’s visibility and prestige level. Therefore, egalitarian schemes essentially tend to lead to a ‘market for lemons’ where those faculty members who are overpaid (‘lemons’) will remain with the university, while faculty who are underpaid (‘peaches’) will tend to leave the university for other uni-

---

23 Based on the behavioral assumptions of agency theory, there is little reason to believe that only increases in the basic salary would be enough to prevent this behavior. ‘High / low’ salary and ‘enough’ are relative concepts and therefore open to personal valuation and interpretation.
versities or organizations where they will receive compensation equal to or above their marginal product (Vining & Weimer, 1999, p. 15).

3.5.2 Opportunistic pursuit of prestige and revenues

In addition to occasional and uncoordinated shirking activities by individuals, opportunistic behavior may also take place in a more collective and organized manner at the institutional level. Different variations of this type of opportunistic behavior can be suitably illustrated through the main propositions of the Howard Bowen’s revenue theory of cost (Bowen 1980; see also 1970).24 Revenue theory of costs can be summed up according to the following five closely interrelated laws (see Bowen, 1980, pp. 19-20).

Law I: The dominant goals of universities are educational excellence, prestige, and influence. The first law sets the stage for Bowen’s theory by introducing the assumed dominant goals of universities. These three dominant goals – excellence, prestige and influence – are usually deeply interconnected and even partly overlapping. ‘Excellence’ has been characterized with terms like ‘high standards’, ‘the best’, and ‘elitist’. An institution that takes the best students, provides them with best human and physical resources, by its nature ‘excels’ (Harvey & Green, 1993, pp. 10-12). Excellence usually enhances prestige, because prestige itself can be considered to be a reputational measure for excellence (Garvin, 1980, p. 15). Again, increased prestige brings higher institutional and professional influence; and influence itself enhances the possibility of gaining higher levels of excellence and prestige much easier.

It is reasonable to believe that among these assumed goals, the gaining of and upholding of prestige is the most dominant and important goal (e.g. Breneman, 1970, p. 35; Garvin, 1980, p. 22; James, 1990, pp. 81-82; Leslie & Rhoades, 1995, p. 192). For individual faculty members, one of the most important determinants of their prestige is the amount and quality of research accomplishment, and publication activities

---

24 Although Bowen’s theory illustrates only the teaching functions and costs, it can be assumed that a similar logic of the theory is also relevant for describing the economic behavior related to the research and community service functions of universities (see Bowen, 1980, p. 5).
The most prestigious scholars are usually those who are known from their high number of high quality books, articles, or experiments. In addition to these personal characteristics, an individual scholar’s reputation may also be enhanced by appointment to a prestigious basic unit. In addition to personal research accomplishments, faculty can also derive prestige by having or getting strong graduate programs. The adding of graduate programs, especially doctoral programs, is generally related to a desire for increased prestige (Garvin, 1980, p. 14; p. 42).

The individual’s and basic unit’s prestige can also be increased through the previously mentioned halo effect. Affiliation with a high prestige unit is likely to increase a scholar’s visibility, and increased visibility usually provides better access to leading scholarly journals, increased contact with eminent colleagues, and also, greater scholarly productivity (Garvin, 1980, pp. 115-117). In a similar way, the increase in one basic unit’s prestige also increases the prestige of other basic units at the same institution.

The determinants of the overall institutional prestige level are the sum of a number of things, including awards won by faculty, success in ranking lists and league tables, the number and status of programs and basic units, the amount of research funding, the quality of students, and the impressiveness and quality of buildings, facilities and equipment can all be considered as important signals of an institution’s prestige level (cf. Garvin, 1980, pp. 22-24; Astin, 1985, p. 38; Goldman, Gates & Brewer, 2001, pp. B13-15; Brewer et al., 2002, pp. 28-29; p. 32; p. 68). The level of resources is also correlated with a high prestige level in a mutually self-enforcing manner. Substantial resources and increases in revenues can be used to purchase distinction and a prestigious reputation for the institution. An increase in the prestige level is likely to raise the institution’s rank both within the scholarly community, and in the eyes of prospective students. High prestige attracts more and better students and more prestigious faculty, which in turn, has a positive effect on funding (Hölttä, 1995, p. 57; Meiners & Staaf, 1995, p. 199; cf. Birnbaum, 1988, pp. 48-51).

25 In the U.S., university sports teams (e.g. football, basketball, baseball) are also significant prestige generators (see e.g. Brewer et al., 2002). In Europe, university sports teams rarely have such status.
Law II: In the quest for excellence, prestige, and influence, there is virtually no limit to the amount of money a university could spend for seemingly fruitful educational ends. According to the second law, universities rarely admit to having enough money to undertake their tasks. Each university tries to convince the government that it inherently requires a higher rate of funding, and that severe quality deterioration and enrollment decline will ensue if the resources are not forthcoming. In fact, it is suggested (usually by faculty or university administrators themselves) that the level of higher education funding should be determined on the basis of universities’ needs (Bowen, 1980, p. 16). However, given the assumed operational goals of universities and the existing informational asymmetries, the situation must seem extremely dubious especially from the government perspective. It is very unlikely that the government could ever objectively evaluate every alleged need proposed by a university. Under the pressure of different constituencies such as faculty, students, administrators and external stakeholders, it may be easy for the government to delude itself into thinking that increased funding will automatically produce the improved outputs promised by the universities. This is also because high-cost universities with impressive resources may be assumed to correlate with high quality (Bogue, 1998, p. 8).

Law III: Each university raises all the money it can. Lacking distributable profit as a standard for motivating and evaluating performance, a non-market agency like a university may at least tacitly adopt or accept an increase in the size of its budget (or protecting it from cuts) as its primary operative goal. Incentives within the university will develop to reward participants for justifying costs rather than reducing them. Once established, operative goals such as pursuing extra revenue can become part of the incentive structure to which members of the university respond. Although many of the individual members of the university may be, and usually are, conscientious and professional in their desire to do a competent job, their behavior will also be affected by operative goals that govern their university’s behavior. Ironically, a single faculty member or administrator, who may not be personally motivated to opportunistically increase his or his unit’s prestige or revenue level, can be driven by the competitive conditions both internal and external to the university to do just that (cf. Niskanen, 1971, p. 39; Wolf, 1988, p. 70; p. 76).
Since the pursuit of excellence, prestige, and influence is usually very expensive, universities are compelled to raise as much extra revenue as is possible. Many universities are keen to take on new teaching and research functions or to expand existing ones only when new resources are provided and new initiatives emerge. In fact, it is rare for a university to turn down any new revenue generating opportunity. Obtaining as many resources as possible is an attractive option for universities, in particular if there is no obvious cost of doing so (Bowen, 1980, p. 16; Williams, 1995, p. 185; Levin & Koski, 1998, p. 11).

Increased revenues are connected to the increase of the size of the university. A high student enrollment number can be preferred because it generates more revenue. Unlike the case of research, for which funding is linked to ‘expensive quality’, the funding of undergraduate education is usually associated with student quantity (Mora & Vila, 2003, p. 123). Basic units and individual faculty members may reason that the larger the size of the university, the more students will be likely to be attracted to their field, and, consequently, the easier it will be to achieve promotion or to secure new faculty and expanded facilities and equipment (Garvin, 1980, pp. 25-26).

In addition, the size of the faculty can also be an important determinant of success for the university. In particular, the basic units will view the ability to generate faculty appointments as the key indicator of their standing within the academic community. A larger faculty enables smaller class sizes and allows basic units to expand into new exciting fields of study. In fact, to lose a faculty position is to be judged a loser (Zemsky et al. 1993, p. 57; Ehrenberg, 2002, p. 11). Also, many in the central administration are growth oriented. Since the administration is largely responsible for financial matters and as it exercises authority over academic elements thorough budget control, the size of the university budget is especially important for them. Whatever pecuniary and non-pecuniary benefits are associated with the position of administrator, these benefits are likely to increase with an increase in revenues: bigger budgets usually mean more responsibilities, more power and more salary. Also, administrators may want to keep student enrollment numbers high, because this increases the student number-based revenue and because it increases the general size, visibility and attractiveness of the university (Johnson, 1974, pp. 42-43; Garvin, 1980, pp. 24-25; p. 41; p. 55; Astin, 1985, p. 42; Meiners & Staaf, 1995, p. 199).
All in all, there seems to be a general belief within universities that “bigger is better” (Astin, 1985, p. 42). However, it is quite obvious that universities cannot expand their enrollment indefinitely without expecting some decline in student quality and in the quality of instruction. At some point, a trade-off must be reached between increasing quantity and maintaining quality. The behavioral result of this trade-off is dependent on the relative importance given to quantity (i.e. revenue) and quality (i.e. excellence, prestige). Choosing quantity instead of quality only for the sake of gaining additional resources could be seen as a form of opportunistic behavior (cf. Garvin, 1980, p. 26; James, 1990, p. 83).

Law IV: Each university spends all it raises. The fourth law declares that universities will eventually spend all the money they were able to raise. Although some institutions may accumulate reserves (when it is legal to do so), these accumulations are usually negligible in terms of their amount (Bowen, 1980, p. 20). Faculty members usually have an incentive to favor current uses of funds over future uses (Brown, 2001, p. 134). The basic reason for this behavior is that universities do not seem to minimize their costs and they tend not to seek the most efficient production options. It can be generally predicted that where the revenue streams that sustain activity are unrelated to the costs of producing those revenue streams, more resources may be used than is necessary to produce a given output. Additionally, if technological possibilities emerge for lowering costs, raising productivity, or realizing economies of scale, these opportunities are more likely to be ignored or at least they are less likely to be exploited fully (cf. Wolf, 1988, pp. 63-64).

This behavior can be explained through two inter-connected conditions inherent in most government–university relationships; first through the absence of market information and second, because of the lack of property rights. Informational asymmetries resulting from a lack of market information provides universities with an undetectable opportunity to function inefficiently and to escalate their expenses. The lack of profit motive for non-profit or public universities ensures that there are no effective internal residual claimants to provide the monitoring role and no secondary market for ownership or control to constrain cost growth and economic behavior (Brown, 2001, p. 130). At times, cutting costs may create some utility for them, but never in the manner or
breadth that cost savings benefit for-profit firms. Cutting costs for the
sake of cutting costs is rarely among the objectives of a faculty member
According to Bok (2003, pp. 24-25):

[T]hough cost savings are helpful to universities, they are rarely a matter of life
and death. No research university has ever ceased to exist because of inefficiency.
In contrast, losing one’s job for poor performance, being taken over by corporate
raiders, and going bankrupt under pressure from more efficient rivals are ever-
present possibilities for most company executives.

Sometimes efficiency and cost saving aspects may get ignored because
of negative counter incentives. For example, such incentives may ap-
pear in situations where the institutions or units which are able to re-
duce their personnel needs by using efficient and low cost techniques,
are ‘rewarded’ by a reduction in the number of faculty positions as a
consequence of their savings (Levin, 1991, p. 252; Levin & Koski, 1998,
p. 12). Or, if basic units or universities are not allowed to roll over their
savings from one year to the next, they have very little incentive to intro-
duce any economizing changes and conversely very strong incentives to
spend all of the funds budgeted for the year. However, if basic units or
institutions as a whole are allowed to roll over their funds into the next
year, it is likely that at least some of them will take the opportunity to
reduce expenditures and create savings and reserves (Brinkman, 1990,
p. 110).

It would seem to be very difficult for universities to change their
spending habits since (notoriously) the establishment of new positions,
courses, basic units or programs is always easier than eliminating them.
Usually, any additional income is used to expand existing programs and
to establish new ones, and there is a reluctance to reallocate resources by
eliminating programs that might be perceived to be less needed. Institu-
tions, basic units, and individual members of faculty and administration
are likely to oppose changes that cause a net reduction in the level of re-
253). In fact, almost every new or old position, program, or basic unit
generates its own constituencies and even organized pressure groups
who will use all their power (including strikes and small but visible and

[A]ny senior administrator, who recommends holding down spending, or even worse cutting spending, risks incurring the wrath of the faculty. Holding down spending increases may lead the institution’s faculty salaries to fall behind their peers at other institutions, and any such decrease will diminish faculty members’ attachment to the institution and make more difficult to recruit and retain top faculty.

Simultaneously, it should be remembered that higher education is a highly labor-intensive field and therefore salaries form a very large proportion of universities’ expenditure (e.g. Bowen, 1970, p. 82; Levin, 1991, pp. 243-244; see also Baumol, 1967). Therefore, a situation where a large majority of faculty members are tenured creates substantial difficulties for the reallocation of resources from one subject to another. This inflexibility is particularly constraining during the occasional periods of budgetary retrenchment (Tight, 1988, p. 126; Ferris, 1991, p. 17; Vedder, 2004, pp. 75-76).

**Law V:** The cumulative effect of the preceding four laws is toward ever-increasing expenditure. The fifth of Bowen’s laws is a logical conclusion of the preceding four. It predicts an ever-increasing level of university expenditure. Despite increased revenues, universities seldom admit to having sufficient or too many resources. Such a confession would reduce their future revenues, and thereby make the dominant goals of excellence, influence and especially the prestige, more difficult to attain. The main problem is that incentives based on these goals are not by nature counteracted within the higher education system by incentives which would lead universities to greater parsimony and efficiency (Bowen, 1980, p. 20). On the contrary, ever increasing expenditure of individual universities may generate accumulative effects because of the mutual competition of universities. No university has either the option or motivation to estimate how urgent its own monetary requests are in comparison with those of other universities. More likely, there is a natural tendency...
for each university to exaggerate the importance of its own needs (cf. Downs, 1967, p. 186).

3.5.3 Opportunistic cross-subsidization

From the economic perspective, opportunistic cross-subsidization can be understood as an activity where a university carries out a set of profitable activities that do not yield utility per se, to derive revenues that can be spend on utility-generating activities that do not cover their own costs (James, 1990, p. 87). This is made possible by informational asymmetries, particularly those in production technology, but its appearance is also the related to the complexities of academic and administrative work. Cross-subsidization is usually motivated by the pressures to increase the level of institutional or individual prestige.

Therefore, the priority of a cross-subsidizing university is to find a set of these profitable activities which attract government funding and which the faculty are able and willing to carry out using low-cost production technology (James, 1990, pp. 87-88). The discretionary resources (a.k.a. “slack”, see Cyert & March, 1963, pp. 36-38) which arise from the difference between total revenues and operating costs are used to cross-subsidize activities which do not generate revenue but which generate prestige or some other utility. Cross-subsidization becomes the most blatant form of opportunistic behavior at the point where a university decides:

1. to seek extra revenues because the flow of revenues simultaneously increases the level of discretionary resources;
2. to operate at a level that produces lower quantity or lower quality outputs than was agreed with the government; and
3. to divert the discretionary resources generated this way to engage in activities which are not in the best interests of the government.

Opportunistic cross-subsidization may take place e.g. between the academic functions (from undergraduate to graduate studies / research activities), between the academic and administrative functions (from teaching / research activities to administration), and between academic
functions and infrastructure (from teaching/research activities to physical surroundings and equipment).

In the first type of opportunistic cross-subsidization, resources of low-prestige undergraduate education are transferred to subsidize high-prestige graduate studies or research (e.g. Mora & Vila, 2003, 123; see James, 1978; 1986; 1990). Although research excellence can improve teaching, it often competes directly with undergraduate instruction for the monetary resources and the time and attention of the faculty (Goldman, Gates & Brewer, 2001, pp. B13-15). In fact, in extreme cases undergraduate instruction can be a disutility-making activity preventing faculty from concentrating on prestige generating graduate training and research (Hölttä, 1995, p. 188).

Cross-subsidizing may become an especially attractive option when the government funding received per undergraduate student exceeds the actual average cost of providing the student’s education. Cross-subsidization allows the university to form discretionary resources which it then spends on more graduate students or research activities. More resources allocated to graduate students and research activities eventually result in less time in interaction with undergraduate students (Hölttä 1995, p. 164). For instance, graduate students may be taught by expensive expert scholars in small classes, compared with undergraduates who are taught in large classes by less-expensive, relatively inexperienced teaching assistants (graduate students). (James, 1990, p. 87; Vedder, 2004, p. 80.)

In the second type of opportunistic cross-subsidization, university administrators decide to subsidize their own activities at the expense of teaching or research functions. In fact, there is great potential for this type of behavior to occur, since administrators are often in positions that allow them to collect resources and spent them on their own activities. More resources are likely to increase the prestige and importance of their own work, provide more junior administrators with the capacity to ease job burdens, and enable growth in their salaries (Vedder, 2004, p. 45). This can lead to a vicious cycle of bureaucratic expansion: more and more resources are eventually needed to administer the administration itself. This behavior becomes observable e.g. when the sphere of administrative activities and work positions seems to be growing substantially faster than the core instructional and research activities and positions.
In the third type of opportunistic cross-subsidization, administrators or faculty members decide to transfer the discretionary resources taken from teaching or research activities into equipment or physical surroundings like buildings and landscape. This may happen because one of the prestige building factors for universities is also related to ‘what they look like’. Therefore, universities may be tempted to apply their slack resources to matters of physical appearance rather than the quality of teaching and research. According to Johnson (1974, p. 45) university administrators in particular appreciate monument-building because they find a great deal of satisfaction in changing the physical appearance of the landscape by erecting new and impressive buildings whose sponsorship they can claim credit. The issue of whether the buildings serve any educational or social purpose may have little or no relevance. Rather a sharp-worded statement from Bowen (1970, pp. 87-88) characterizes these issues following way:

Among professors, sophisticated equipment tends to be a status symbol. Sometimes the need could be met at only slight inconvenience by using equipment located in other departments of the same university or in governmental and industrial laboratories, or in other universities. . . . As for standards for quality, there is no doubt that good education can be conducted in barracks, in quonset huts, or on two ends of a log. It is a legitimate question to ask whether graceful architecture, fine landscaping, air conditioning, private offices, and elegant interiors are needed. There is a belief in this country [U.S.], inherited from Europe, that universities should be symbols of the highest and noblest thoughts and works of man, that they should become focal points of tradition and inspiration. Society should symbolize the importance it attaches to learning by making universities comparable in beauty to the best corporate skyscrapers or the finest

26 This assumption is presented from the perspective of diseconomies of scale, which assumes that the larger the organization is, more complex it will be. Non-opportunistic factors explaining the administrative growth can be e.g. increased government's demands for reporting procedures or internal processes that are aimed to relieve faculty from administrative work. (Gornitzka et al., 1998, pp. 28-29; see also Leslie & Rhoades, 1995.)
cathedrals. All these things, however, can be achieved with simple buildings effectively sited and landscaped, even including some buildings designed for shorter life. There is no reason for monumental structures or conspicuous and wasteful ornamentation on the campuses.

Indeed, unnecessary high-cost equipment, architecture, interior decorating, larger offices and nice faculty clubs can become unnecessary expensive status symbols, which have nothing or very little to do with the true interests of the resource providing government. It is likely that impressive buildings with expensive ivy-covered walls tend to develop a prestigious impression, easily associated with high quality, but for a value-for-money-seeking government, the ‘looking good’ is not sufficient unless it also equates with ‘being good’ (cf. Johnstone, 2001, p. 153; Brewer et al., 2002, pp. 28-29; see also Wolf, 1988, p. 72).

3.5.4 The distortion of monitoring information

Distorting the monitoring information is opportunistic behavior in its purest form, since it includes calculated efforts to mislead, distort, disguise, obfuscate, or otherwise confuse (Williamson, 1985, p. 47). It is closely connected to all forms of the informational asymmetries resulting from the work, from organizational structures, and from production technology. Nevertheless, it is likely that the informational asymmetries resulting from the organizational structures, especially from the vertical differentiation, play a central part in its occurrence.

By definition, information distortion takes place when universities as institutions, their subunits, or some of their staff members deliberately provide or attempt to provide wrong information about their performance to the monitoring government. This can take place by supplying performance information that portrays the university’s efforts, activities and results in either a too positive or a too negative light. In the case of the former, the university provides to the government only such information that the faculty and administrators believe the government would like to receive. Positively distorted information paints the best picture of a university’s activities and results, while it is simultaneously excluding information that would make the university’s behavior ap-
pear less positive. On the other hand, providing information which is
too negative is usually related to the pursuit of more government re-
sources. By distorting information more negatively, the university is
able to claim that it desperately needs more resources in order to meet
its productive and financial responsibilities. (cf. Downs, 1967, p. 118;
Bohte & Meier, 2000, p. 175.)

In general, it is not uncommon sometimes for employees to distort
the information they pass upwards to their superiors in the hierarchy.
According to Downs (1967, p. 77) “all types of officials tend to exag-
gerate data that reflect favorably on themselves and to minimize those
that reveal their own shortcomings”. It is unlikely that this observation
would exclude the behavior of faculty and administrators in universi-
ties.\footnote{According to Downs and Niskanen, universities can also be considered as ‘bure-
reaux’, and the members of faculty and administration as ‘bureaucrats’ (see Downs,
1967, pp. 24-26; Niskanen, 1971, p. 15; pp. 22-23).} But what actually motivates universities to cheat? Bohte and
Meier (2000, pp. 177-178) have distinguished the following four motivati-
ons for organizational cheating: (1) performance gaps; (2) inadequate
resources; (3) overwhelming task demands; and (4) variations in levels
of bureaucratic monitoring.

Performance gaps, i.e. deficiencies in task performance may lead
individuals, basic units or institutions to distort the monitoring inform-
ation. For instance, a university with an unacceptably low graduation
rate faces a great deal of pressure to improve its performance in the fol-
lowing year. Poor graduate ratings might attract negative attention from
the resource-providing government, but also from the media, from stu-
dents and their parents and from other universities and the academic
and scholarly community. Because true improvement in performance
would be very difficult and time consuming, a university might be
tempted to cheat and bias the graduation numbers without making any
enhancement in real performance. (Downs, 1967, pp. 193-194; Bohte &
Meier, 2000, pp. 177-178.) Cheating behavior might also involve the in-
adequate level of resources (perceived or real) provided for accomplish-
ing their tasks. Cheating is more likely to occur if universities feel that
they have task demands which are too difficult compared to the level of
resources they have received. In order to fulfill the government’s expec-
tations and to receive the same amount of, or more funding, universities
may be tempted either to provide information about their performance which is too positive, or on the other hand, information about the level of resources which is too negative. (Bohte & Meier, 2000, p. 181.)

The occurrence of information distortion may also be connected to the easiness of cheating. Individual or institutional lying, positive or negative, may become preferable especially in those situations where the government is least able to monitor or verify the information. Conversely in such situations, where the government is somehow able to verify the behavior or performance, distorting the information becomes more risky. From this perspective, universities usually have strong incentives to obtain the information relevant to their position and to obscure monitoring information relevant to the government. Constrained by the monitoring responsibilities of other universities (spatial differentiation) and other possible duties, the government usually has weaker incentives and it uses fewer resources to review the activities of universities compared with what the universities have for the provision of the information. Although the nominal agency relationship between a government and a university stresses the possibilities of the government to exercise its power, the relative incentives and available information can give to the universities an equal or even dominant position in their relationship with the government. (cf. Niskanen, 1971, pp. 29-30; Kiser, 1999, p. 150n; Bohte & Meier, 2000, p. 178.)

At the institutional level, cheating and distorting the monitoring information requires coordination among those faculty members and administrators who can make such decisions. In universities, central administrators and faculty members in administrative positions (e.g. department heads) are usually the key persons responsible for passing on the distorted information. Although administrators and faculty members themselves are also constrained by informational asymmetries, they still have a greater possibility to evaluate the performance information than the government could ever have. When recognizing or suspecting information distortion on the part of their subordinates or sub-units, they will face some serious dilemmas about the value of honesty. Even if they would prefer to be honest, they may also simultaneously believe that it is in the whole university’s interests to retain the distorted information when they eventually forward it to the government. (cf. Downs, 1967, pp. 120-126; Bohte & Meier, 2000, pp. 175-178.)
3.5.5 The effects of moral hazard opportunism

On the whole, opportunistic behavior decreases the productivity of universities. Decreased productivity results from reduced efficiency and effectiveness in the use of government resources (cf. Berman, 1998, 5-6). First and foremost, moral hazard behavior is likely to reduce efficiency, especially the technical efficiency of universities. This can take place basically in two different ways (cf. Jones & Pendlebury, 1992, p. 5):

1. moral hazard behavior decreases the expected output for the given input;
2. moral hazard behavior increases the level of inputs for expected output.

In the first option, the university produces fewer teaching and research outputs than it would produce without the emergence of opportunism. For instance, shirking behavior and opportunistic cross-subsidization both have the effect of lowering the university’s expected output because they employ productive resources for other purposes. The second option refers to inefficiencies that result from revenue pursuing behavior without improvements in the output level. For instance, self-interested demands based on distorted information in order to get another funding period for an expensive, but chronically and deliberately non-productive research project.

University opportunism is also likely to reduce effectiveness, including the quality of research and teaching processes and outputs. For instance, the shirking activity of faculty members leading to a constant absence from scheduled instructional tasks may lead to lower learning outcomes and might prolong students’ graduation times unnecessarily. Effectiveness is also lost when funds earmarked for expenditure on undergraduate education are opportunistically transferred to subsidize research or other more prestige generating activities. Bigger class and group sizes or easier pass-rates in exams may produce ‘savings’ that lower the quality of undergraduate instruction. As result of this, the lower learning outcomes of under-resourced undergraduates also lead to reduced effectiveness. The severity of this problem is greatly dependent on the funding structure of the university. If the government fund-
ing formula is enrollment driven or is otherwise premised on the pri-
macy of the teaching activity, the danger for this type of cross-subsidi-
zation is likely to be greater, and it is reasonable to expect that teaching
activities will tend to be used to subsidize research activities (Harrold,

3.6 Governing the problem of moral hazard

Section 2.3.2 introduced the fact that agency theory presents two dif-
ferent possibilities for the principal to overcome an agent’s opportun-
ism: behavior-based contracts and outcome-based contracts. In brief, it was
concluded that behavior-based contracts constrain an agent’s options
to behave opportunistically by decreasing informational asymmetries.
The other alternative, outcome-based contracts, is aimed at the same
target by reducing goal conflicts. Behavior-based contracts rely on mon-
itoring procedures and compensate the agent on the basis of observed
behavior, whereas outcome-based contracts place emphasis on the role
of economic incentives and compensate the agent on the basis of pro-
duced outcomes.

The following sections attempt to operationalize these two forms of
agency contract to the government-university relationship. In reality,
government governance procedures rarely follow the dichotomy of be-
havior-based and outcome- / output-based\textsuperscript{28} categories in a strict man-
ner. In fact, governmental governing arrangements are quite often con-
nected to specified funding formulae which combine the various sets
of input- and output-based indicators of the institutions’ teaching and
research activities. Nevertheless, by analyzing behavior- and output-
based governance instruments separately in the form of ‘ideal types’, it
is possible to clarify some of the observations to be made.

\textsuperscript{28} By definition, outputs are more directly related to the work that produces them,
whereas outcomes are changes or results that outputs evoke (Wilson, 1989, pp. 158-
159) or the effects of outputs in society (Barnetson & Cutright, 2000, p. 279). It is im-
portant to note that agency theory usually utilizes the term ‘outcome’ in the traditional
meaning of ‘output’, and therefore, these terms are considered here as synonymous
unless otherwise stated. Due to the fact that the term ‘output’ is more frequently uti-
lized in higher education literature, it will be used instead of ‘outcome’.
3.6.1 Behavior-based governance

Governments perform numerous controlling and monitoring procedures in their relationships with universities, and many of these procedures have a logical analogy with behavior-based contracts. Here, all of these arrangements are referred as behavior-based governance procedures. In general, such procedures include all those reporting requests, site visits, reviews and evaluations that focus on monitoring the productive activities, with the primary purpose of informing the government about how universities are ‘behaving’ in economic and operational terms. As in behavior-based contracts, the amount of government funding has a connection with the observed behavior.

Different forms of input-based funding arrangements applied by the governments represent one type of behavior-based governance procedure. Input-based funding is a form of government funding procedure, where the amount of funding allocated is based on different input elements or a university’s production processes, i.e. indicators that refer to the resources used and / or the activities carried out by the universities (Jongbloed & Vossensteyn, 2001, p. 128). When financial means are made available to institutions to cover distinct university costs such as staff salaries, material means, building maintenance costs, or investments, the term input-based funding is used. Further, if the university budgets are driven by measures such as student enrollments, it can also be considered as input-based funding, since students can also be considered as inputs to the teaching function (Jongbloed & Koelman, 2000, p. 6). As with behavior-based contracts, the verification of universities’ actions in input-based funding practices takes place primarily through an observation of the universities’ resource use and production activities (i.e. monitoring the behavior). Further, the amount of funding is connected to the results identified by these observations (i.e. rewarding the behavior).

Different ways to organize input-based funding exist. One of these ways is line-item budgeting. In line-item budgeting, a university’s funding is allocated to particular items or types of expenditure that are the major inputs of the production processes. These typically include salaries, capital investments, travel expenses, and building maintenance. After a budget period the government reviews income and expenditure
in order to find out whether the funds were expended on the objects for which they were appropriated. Line-item budgets are usually incremental. With line-item budgets there is marked tendency for the budget for the forthcoming financial year to be based solely on the previous one; that is, the budget represents a series of incremental increases on the record of the previous year. (Kaiser, Florax, Koelman & van Vught, 1992 cited in Williams, 1995, p. 184; Sheehan, 1997, p. 132; Hughes, 2003, p. 169.) Basically, line-item budgeting is a tool for governments to verify that the funds allocated to universities are spent properly. This verification is based on the assumption that allocating funds line-item by line-item is able to secure their appropriate and effective use (Massy & Hulfactor, 1993, p. 29).

Another type of input-based funding procedure is formula funding, where a formula is established to reflect the inputs and production processes of universities. Based on a formula criterion and the data collected from universities, the government can determine the amount of funding each institution is entitled to receive. A usual input measure in the formula is the number of undergraduate or graduate students enrolled. Applicable process measures can be e.g. the number of applications per study place, workload per faculty member (courses taught, contact hours and class size), or cost measures like average cost per student and staff-student ratios. (cf. Cave et al. 1997, pp. 118-119; Sheehan, 1997, p. 133.) Unlike the situation with line-item budgeting, formula funding usually gives greater freedom for universities’ internal allocations; once allocated, universities can decide themselves how to spend the money. However, the monitoring and verification of the resource use takes place in the next funding period, when the amount of funding is determined on the basis of collected data and the funding formula.

Categorizing various quality assessment practices to behavior-based and output-based governance is difficult, since assessment procedures usually also include the utilization of output indicators in addition to input and process measures. Nevertheless, procedures that focus on in-

---

29 In this work, the term ‘quality assessment’ is used to describe a range of types of government necessitated external quality monitoring procedures, like “quality evaluation, review, audit, and monitoring” (Brennan & Shah, 2000, p. 5). Accreditation procedures of institutions, educational programs and degrees can also be included here as quality assessment, if the accreditation process is ordered and the results utilized by the government.
puts or production processes can be considered to be behavior-based controlling procedures. The nature of these quality assessment procedures is summative, which means that the emphasis is placed on control and accountability rather than improvement and development. As in behavior-based contracts where the monitoring reveals agent’s behavior toward the principal, the results of quality assessments provide performance information that may be used to inform the government’s future funding decisions. Quality assessment can be directed at different levels within universities: the whole institution, a basic unit, or at the program level with a focus on teaching, research and / or administrative functions. Each point of focus can be broken down further. For example, the assessment of teaching may be concerned with content or pedagogical aspects; assessment of administration may be concerned with strategic management or personnel policy and job satisfaction; and the assessment of research may focus on intrinsic academic quality or relevance and application (Brennan & Shah, 2000, p. 12).

In reality, quality assessment procedures can take many forms (e.g. student surveys and interviews about teaching quality). However, peer review has been the dominant instrument in controlling and assessing research quality, and it is also increasingly being applied to the assessment of teaching. As its name implies, peer review is a form of assessment, which is conducted by a group of peers. These are usually academic peers, i.e. colleagues in the field, but others such as the representatives of different stakeholders (e.g. alumni, industry) can also act as peers (Vroeijenstijn, 1995, p. 55: pp. 57-58; Brennan & Shah, 2000, p. 12.) One of the advantages of peer review is its validity. In complex professional fields, such as higher education teaching and research, assessing quality is particularly difficult because of the professional expertise required to make accurate judgments. It is therefore possibly the only way to assess quality directly, without quantitative proxy indicators (cf. Vroeijenstijn, 1995, pp. 55-56 quoting Goedegebuure, Maassen & Westerheijden, 1990; 30 Summative quality assessment can be considered as a screening method when its use is examined in the context of the adverse selection problem. The main difference between considering quality assessment in connection with adverse selection and moral hazard problems culminates in the timing of the assessment act. In adverse selection, it is a pre-contractual attempt to reduce informational asymmetries, whereas in the context of moral hazard, it is a post-contractual attempt to reduce informational asymmetries.
Schmidtlein, 2004, p. 280). However, as a judgmental process, it may also be informed by quantitative information based on performance measurement (Cave et al., 1997, p. 200).

3.6.2 Output-based governance

The other option for the government to prevent moral hazard problems from occurring is to offer output-related incentives to universities. As outcome-based contracts, these various output-based governance arrangements link the amount of government funding with pre-determined outputs to be produced by the universities. Similarly with outcome-based contracts, the general objective of output-based governance is to reduce goal conflicts by aligning the official and operative goals of universities with the ones of the government. Output-based governance is believed to contain more straightforward incentives for productive behavior than the various input-based funding mechanisms. If universities perform well, they will have their budgets increased, if they appear to be less successful, they will receive a lower level of funding (Jongbloed & Koelman, 2000, p. 6; Canton & van der Meer, 2001, p. 85; Liefner, 2003, p. 478). Output-based governance mechanisms may become an even more attractive choice for the government if it does not have to pay universities any ‘risk premium’. This situation is usual especially in those systems where there are competing universities and where the universities do not have an ‘exit option’, i.e. the economic or judicial option to withdraw from the relationship if not fully satisfied with the terms of the government’s contract.

Output-based governance is usually organized through performance-based funding practices which are constructed on some output-based funding formula. Because of the intangible nature of teaching and research outputs, governments have been forced to create surrogate measures and proxies, indicators, to describe and represent the outputs (Cave et al., 1997, pp. 26-27).

Performance-based funding formulae may include output indicators or output-based performance indicators. Output indicators derived from teaching activities can include the number of study credits obtained, the number of exams passed, the number of undergraduate and graduate degrees granted and graduates’ employment rates. Output indica-
tors derived from research activities can be e.g. the number of research publications, research income, the number of patents and licenses received, the number of doctoral students, and the number of graduate / doctoral degrees granted. (e.g. Jongbloed & Vossensteyn, 2001, pp. 128-129; Koelman & Venniker, 2001, p. 104; see Cave et al., 1997, Chapters 1, 4 and 5.)

The purpose of output indicators like exams passed, credits accumulated, and the number of undergraduate or graduate degrees granted is to reflect the quantitative efficiency aspects of teaching outputs. Connecting the funding to these outputs is especially presumed to promote the efficiency aspects. The employment rate indicator, on the other hand, is designed to indicate relevance and impact that the teaching offered and the degrees accomplished make in labor markets. It is thereby intended to reflect the effectiveness and quality of produced teaching outputs. On the side of the research outputs, the most important output indicator is the number of publications, which is usually connected to the measurement of research efficiency. However, measuring the number of publications has been criticized for emphasizing quantity too much and ignoring the quality aspects. To account for the quality of publications, different publications may be given different weights. Weights may differ also between different types of publications (Koelman & Venniker, 2001, p. 104). In order to discover the quality of publications, governments may also use the results of citation analyses or indices. Citation indices count the number of times the publications are cited by other researchers. It is assumed that a higher number of citations indicates a higher quality of a publication. The rationale of this lies in the analogy of market signaling behavior. During the process of research, it is assumed that the relevant literature is surveyed and the articles are selected for citation primarily on the basis of their relative quality. (Laband, 1985 cited in Cave et al., 1997, pp. 178-179; Cave et al., pp. 178-179.)

Using research income as a research output indicator is believed to highlight the quality and effectiveness of the research produced. It utilizes the economic concept of market share by assuming that the relative competitiveness of research can be indicated by the willingness of the private or public awarding bodies to provide research funding. The best research products are expected to obtain the most income, and therefore the level of research income of a given university may be taken as a mea-
sure of its relative effectiveness and success (cf. Cave et al., 1997, p. 188). Similarly, the number of graduate (doctoral) students is expected to indicate the relative attractiveness of a university among the pool of prospective graduate students. It is assumed that high quality research conducted in a university can also be reflected in high doctoral student demand. In addition to the efficiency of graduate teaching, the high number of doctoral degrees has been believed to correlate positively with the quality and effectiveness of (graduate training related) research activities and outputs (Opetusministeriö, 1995, p. 6).

In addition to the academic outputs, the non-academic impact and effectiveness of research output can also be measured. Output indicators such as patents and licenses (number of / income from) are believed to reflect the usefulness of academic research in the non-academic fields of a society, like industry and trade. Other non-academic output indicators can be related to various research outputs of specialized disciplinary fields. These can include computer software, musical compositions, paintings, sculptures, engineering designs, or translations published from other languages (cf. Cave et al., 1997, p. 174; pp. 196-198).

Besides (or on behalf of) output indicators, the government may also use more complex output-based performance indicators. The substance of these indicators may be ratios, percentages, or other quantitative values that reflect the productive performance of universities. Since the output-based performance indicators usually combine different input and process elements to output indicators, they are less analogical with outcome-based contracts than is the use of ‘pure’ output indicators. Nevertheless, the basic incentive effects of their usage is expected to be quite similar with the use of output indicators, since the amount of funding is connected in part to the produced outputs.

The performance indicator of value added can be used to measure the quality, effectiveness and efficiency of the teaching processes of universities. Value added reflects the improvement in students’ capabilities or knowledge as a consequence of teaching. Measuring value added requires (standardized) assessments of students’ development or attainments as they begin their studies, and assessments of those same students after they have had the full benefit of the teaching received at the university. Value added is the difference between their attainments when they have completed their education and what they had already
attained by the time they began (Bennett, 2001, pp. 40-41.) As an output-based performance indicator, the value added measures the effectiveness of teaching in terms of the relative improvement achieved in the students’ capabilities between the time of matriculation (input) and the time of graduation (output) (Yunker, 2005, p. 355). In addition to effectiveness measurement, another rationale for measuring value added lies in the efficiency of the teaching processes. The more efficient universities produce more value added at the same or a lower cost. Another measure or estimation technique of value added is to establish a relationship between all the (private and public) benefits of the teaching process, and all the relevant costs. (Cave et al., 1997, pp. 124-126.)

The graduation rate as an output-based performance indicator is believed to be useful as a means of measuring the effectiveness and quality of teaching processes. The graduation rate refers to the ratio between the number of enrolled (undergraduate / graduate) students (input) and the number students who have graduated (output). The closer the number of graduates comes to the number of enrolled, the better the graduation rate. Another output-based performance indicator closely related to the graduation rate is the graduation time. This indicator refers to length of time it takes a student to complete a degree. Both the graduation rate and the graduation time measure effectiveness. It is assumed, that highly effective and good quality teaching also leads to higher graduation rates and faster graduation times. In addition to effectiveness, the graduation time can be utilized as an efficiency measure. Governments have strongly suggested that institutions are operating more efficiently when students graduate right after accumulating the exact number of credit points required by a degree (cf. Cave et al., 1997, pp. 138-139; Poch & Wolverton, 2006, p. 237.)

Finally, the government may also utilize output-connected average cost measures like average cost per credit unit or average cost per graduate in order to diminish informational asymmetries concerning efficiency (Cave et al., 1997, pp. 27-31.)

31 Other measurement techniques that incorporate an output dimension in their measurement techniques include Data Envelopment Analysis (DEA) and stochastic frontier approach (see e.g. Izadi et al., 2002; Abbot & Dougouliagos, 2003; Johnes, 2004).
3.6.3 Agency variables

When choosing between different behavior-based and output-based governance procedures, the government can analyze and make predictions about the applicability and cost of each procedure in light of the following five agency variables; (A) output measurability, (B) output uncertainty, (C) task programmability, (D) goal conflict, and (E) length of the agency relationship. In addition to their predictive capabilities, the use of these variables offers help both for conceptualizing and analyzing many of the strengths and weaknesses that inherent in using particular behavior- and output-based governance procedures.

Variable A: Output measurability. The measurability of the teaching and research output is central to many debates about the functioning of the universities. The most crucial and controversial issues in output-based governance practices are the following: What are the real outputs of higher education? Can they be defined and measured? If they can, who has the right to create the definition? To discuss and discover what the universities are producing, it is essential to begin by investigating what it is that universities aim to achieve, i.e. what their goals are (Johnes & Taylor, 1990, p. 52). The goal conflicts between the cultural and utilitarian views previously discussed also dictate to a large extent the conceptions of what should be the ‘true’ or ‘right’ outputs of universities. Traditionally, the supporters of cultural arguments have been critical of output measurement. In their opinion, outputs resulting from goals like ‘discovering the new knowledge through research’, ‘dissemination of knowledge through teaching’ and ‘preservation of knowledge through scholarship’ cannot and should not be measured, since the main purpose of teaching and research is to transfer “resources into desired intangible qualities of human beings” (Bowen, 1977, p. 12). The outputs with the greatest value are often outputs which cannot be quantified or measured, because measures can capture only a fraction of the total contributions of higher education to the life of the students and the life of the society at large (cf. Trow, 1996, p. 32).

Contradictory opinions also exist, which argue that university outputs are measurable. Usually these conceptions come from those with utilitarian views supporting governments. The basic rationale for
measurability lies in the verification of the legal, financial and academic accountability of universities and verifying that universities are operating efficiently and effectively is impossible without having measurable outputs. However, some of the opinions supporting output measurement have also come from inside the academic world:

If we academics persist in asserting that our enterprise has grand and noble products (learning, perpetuating knowledge and culture, or whatever), but that the quantity and quality of those products are intrinsically indeterminate (and thus, it may noted, unobservable), then we risk revealing ourselves to be the clueless fools some of our critics claim we are. (Birnbaum, 2001, p. 84 quoting Langenberg, 1996.)

According to these opinions, those who argue a priori that defining and using performance indicators in higher education is an impossible task, automatically disqualify themselves from the discussion since they deny the possibility of achieving progress in this matter (Hüfner, 1991, pp. 48-49).

In addition to problems of output definition, output-based governance mechanisms can also create dysfunctions in the operation of universities. Most of these dysfunctions can be related to what is called the ‘goal displacement’, a phenomenon, where “an instrumental value becomes a terminal value” (Merton, 1968, p. 253). This means that the major and more meaningful intangible goals of an organization are displaced by the lower but tangible goals of the organization because intangible goals do not provide adequate guidance for organizational behavior. Dysfunctional effects then appear when intangible goals differ from tangible goals. (Warner & Havens, 1968, pp. 539-541; p. 554.) Several forms of goal displacement are typical in government-university relationships applying output-based governance methods. In these arrangements, the goals reflected by the tangible output-based indicators displace the non-measurable, intangible goals and outputs. The development of output-based performance indicators incorporates a constant and unavoidable tension between intangible and tangible goals and outputs. The government’s desire to keep outputs tangible and measurable may lead to a system that focuses solely on a quantifiable reality thereby providing a one-dimensional view of higher education outputs (cf. Layzell, 1999, p.
High-powered output-indicators create economic incentives that may shift the university’s and faculty’s effort away from important, but intangible and hard-to-measure outputs. Universities will respond to incentives, but this response may eventually turn out to be other than the true goals of the government, and in the end, the government gets only what it has paid for (Canton & van der Meer, 2001, pp. 86-87).

Many of the dysfunctional effects about increasing the output quantity (or efficiency) relate to the reduction of output quality (or effectiveness). For instance, a university may produce more teaching outputs by letting exams be passed more easily, or by granting more credits or undergraduate degrees by lowering the course requirements. Acting like this, universities are also able to secure a higher graduation rate and shorter graduation time. This type of behavior is also possible with average cost measures if there is no attempt to control the quality of outputs (Cave et al., 1997, p. 30). The same problem applies to the measurement of research outputs. The number of research publications, or the number of the number of graduate degrees granted, can also be increased by lowering standards (e.g. Cave et al., 1997, p. 177; Canton & van der Meer, 2001, p. 85). For instance, universities may encourage their faculty to substitute high quality (e.g. creative, original, innovative, risky) but hard-to-publish research for more conventional and homogenous types of research which are easier to publish (Canton & Venniker, 2001, p. 49; Geuna & Martin, 2003, p. 297). Another form of publishing that increases the quantity, but decreases the quality (per publication) is known as ‘salami publishing’, where an author ‘slices’ a single idea or topic unnecessarily into many publications only in order to multiply the number of his publications. The pursuit of greater efficiency may also create multiple and continuous burn-outs among the most honest and scrupulous faculty members who are not ready to cheat even for the sake of looking more productive.

In its most blatant forms, dysfunctional behavior can also include output stealing or producing more output without actually participating in the production process. For example, if not prohibited by legislation, a university suffering from a shortage of, say, doctoral degrees may

---

32 The goal displacement phenomenon is close to the forms of dysfunctional behavior referred as ‘suboptimization’, ‘tunnel vision’, ‘myopia’, ‘gaming’ and ‘ossification’ (see Smith, 1993).
‘steal’ the prospective doctoral degree of another university by luring the doctoral student by a promise of easier review and examination of his almost finished doctoral thesis (Vakkuri & Meklin, 2003, p. 755).

It seems that output indicators measuring quality and effectiveness are not without problems either. For instance, when using a valued added indicator, universities may have an incentive to alter their teaching practices to prepare students only to score well in value added assessments without actually improving the quality of their teaching (Cave et al. 1997, p. 134; p. 136). In the case of the research income indicator, goal displacement can take place when winning and implementing lucrative research contracts diverts faculty from what might be more academically rewarding research activities (Cave et al., 1997, p. 188). Also, by increasing enrollments only in order to score higher in the ‘number of graduate students’ indicator is likely to have the effect of lowering quality in graduate training if additional qualified faculty are not hired.

In addition to dysfunctional effects, the measurability of output is naturally affected by the capacity of output indicators to authentically measure the output. It is clear that unreliable or ambiguous output indicators lower output measurability. However, it is a quite widely accepted theoretical and empirical fact that every output indicator will have its own drawbacks and shortcomings (e.g. Canton & Venniker, 2001, p. 49; Jongbloed & Vossensteyn, 2001, p. 129). For instance, in the case of the value added indicator, it is extremely difficult to control for the contributions of the university (i.e. its effectiveness) and its instruction, apart from those effects of earlier education, other experiences, and personal maturing during the educational experience (Hoenack, 1982, p. 405). Also, using the employment rate is constrained by the actual measure, because there has to be consideration of what being ‘employed’ means. For the sake of measurement validity, it is essential to discover whether a graduate is employed on a temporary or permanent basis. In addition, it is also important to find out whether the employment corresponds to the graduate’s education and degree. High employment rates on graduation may also result from a too short period of job search, which could lead to poor job matching (Cave et al., 1997, p. 228).

There are also problems in indicating and measuring research output. In the case of research publications, decisions have to be made concerning the types of publications to be included (e.g. single-authored
co-authored books, book and journal articles, edited books, conference papers, book reviews, official reports) and the relative weightings to be given to different types of publications. Because publication practices may differ greatly between disciplines and basic units, some universities / disciplines may feel that the government’s chosen measurement technique discriminates against their own research outputs and favor some other university’s outputs. But the quality measurement also contains a number of problems. The application of the results of international citation indices may favor publications in one language (usually English) at the expense of other languages. Another problem is that citation counts usually cannot distinguish between positive and negative citations, or incorrect from correct ones. They may also be distorted by citations by academic friends or by self-citation. In addition, the choice of citation windows (how many years are considered after the publication) is partially arbitrary, and may work out negatively for seminal or radical publications that take some time to be understood, accepted and referred to. (Geuna, 1999, pp. 83-84; Koelman & Venniker, 2001, p. 105.) Research income as an effectiveness measure also contains problems. Like the publication indicator, this research income does not observe the natural productive differences between disciplines. Some disciplines depend more on research income than other disciplines, and for some disciplines research income is easier to attain. In many cases, for more abstract and theoretical work (such as philosophy) it is not as easy to find research funding as it is for more practically oriented disciplines (such as engineering or medical science). (Cave et al., 1997, pp. 187-188.)

Apart from these specific problems discussed, output-based governance procedures are also constrained by more general problems. First, there is the problem about the monetary value and weighting given to different output indicators. Due the lack of market information reflected by prices, the monetary value given to a certain output is always a more or less arbitrary decision, even when it tries to reflect accurately the production costs of the output. Second, there are problems concerning the number of output indicators. A common mistake for a government to make is to believe that a higher number of indicators provides a more complete picture of universities’ performance. However, the more there are (equally valued) indicators, the less important any one of those
indicators becomes. Further, too many output indicators can create a complex situation of competing, and even contradictory incentives. For instance, if the government decides that universities should both show high enrollment levels (i.e. have an open door policy) as well as high graduation rates, universities will likely find that one is not compatible with the other because of the lowering of the student quality (cf. Layzell, 1999, p. 238). Third, there exist a number of problems related to the possibility of generalizing the measurement results. For instance, two universities may have an equal output of publications or degrees per faculty member, while one may have substantially greater number of other, complementary inputs – such as better equipment and more facilities – that are resulting from the period before performance funding. Therefore, the fact that one university may have a lower average level of performance than another does not necessarily imply inefficiency unless the relative ability of universities to convert inputs into outputs is somehow untangled. (cf. Cave et al., 1997, pp. 121-122).

Variable B: Output uncertainty. Teaching and research outputs both contain a range of uncertainties which constrain the output measurement. The most influential of these uncertainties is related to student behavior. This is because of the dual role played by students: in addition to being clients, the students are also resources employed in the production of teaching services. Therefore, the time and effort students put into the production process (e.g. in their studying) are essential ingredients of most teaching outputs. The measurement problem is that there are many aspects of student behavior over which institutions have little control. Students may have commitments to family or work full or part-time and so enroll in fewer courses per semester. Other factors include student motivation, intellectual ability, parental support, family life, and students’ mental maturity (cf. Poch & Wolverton, 2006, p. 237).

Of course, universities can attempt to make studying as flexible and as comfortable as possible. Universities can enhance their operating capacities for successful study by taking care of the pedagogical and substantial competence of their faculty, by applying appropriate teaching and study equipment, by organizing class schedules and office hours on the basis of students’ needs, by offering more student orientation, study advising, and student support services, and by locating the cam-
pus buildings in an appropriate manner (cf. Astin, 1985, pp. 143-144). Nevertheless, despite all these positive actions that can be performed, the student related outputs will always depend partly on the students' own personal motivation and actions (Kivistö, 2005a, p. 9).

It seems that all of the teaching output indicators and some of the research output indicators are constrained by student behavior related to uncertainty. Indicators like the number of exams passed, credits obtained, degrees awarded, graduation rate and graduation time all suffer from student related uncertainties. The situation becomes even more problematic if universities cannot limit students’ study time or to require students to progress through their studies. In such cases, universities do not have durable means by which to produce their outputs. Therefore, applying output-based governance is more difficult if teaching is provided for zero cost or for very low fees to students and if students are not required to progress through their studies against some formal timetable. Therefore a government policy that limits the number of years of study, either by regulation or by charging tuition fees, is needed to improve the effectiveness of output-based governance (Sheehan, 1997, p. 134). Similarly, the use of the employment rate as a performance indicator lies outside the sphere of the university’s direct control (Jongbloed & Vossensteyn, 2001, p. 129). Graduates may have no motivation to seek employment efficiently straight after their graduation. This could be the case e.g. when students take maternity leave or decide to educate themselves further.

The production processes of research output are constrained by a range of uncertainties, although the relationship between the university’s actions and research output is more direct than it is with student behavior and its connection with teaching outputs. Unlike students’ behavior, faculty behavior is more controllable since they are university employees and therefore the institutions have more control over them than they have over their clients, the students. Despite this, production of research also includes several work related uncertainties. First, creating new knowledge through the means of research is a rather unpredictable and uncertain as a process, even for the researchers themselves. Although some types of research output can be guaranteed (e.g. a research report reflecting the research findings), the relative meaning and impact of this output is usually not well known in advance. Second,
universities cannot manage their faculty in the same manner as mass production factories can manage their routine work employees. For instance, the tenure system, the principle of academic freedom, and the specialized nature of research work all limit the university’s options in influencing the formation of research outputs. Third, the fact of career mobility and the movement of faculty from one university to another can cause output uncertainties outside the university’s control, since prospective and completed research outputs tend to move with their creators (Geuna, 1999, p. 83).

Different environmental factors also affect the production of teaching and research outputs. In particular, the differences between different geographical and economical environments can have crucial effects on universities’ outputs. For instance, it might be much more uncertain for a graduate to find a job in some geographical areas than it is in others, regardless of the quality of teaching received. Similarly, geographic and economic factors might also affect research output. For instance, the universities located close to central urban growth centers usually have significantly better opportunities to get research income, better graduate students, and more capable faculty than the universities that are located in economically declining peripheral areas.

As a whole, applying output indicators assumes causality, inferring that the identified outputs are a result of the university’s activities (Perrin, 1998). When designing output-based funding systems, the government should try to detect all the uncertainty factors that are related to the production processes of teaching and research outputs. If the universities do not have sufficient control over the measured and rewarded outputs, the incentive effects of output-based funding arrangements become flawed and ineffective. In addition, it is reasonable to assume that universities are more risk-averse than government, since they are more or less dependent on government funding whereas the total budget at the government’s disposal is more indirectly connected to the output performance of universities.

**Variable C: Task programmability.** The variable of task programmability is closely related to the level of informational asymmetries. The specific tasks delegated to universities which consist of a range of forms of teaching and research, can be considered generally as non-programma-
ble. Although some teaching or research tasks may be more programmable than others, the non-programmable nature is inherent in all types of teaching and research activities. The core substance of these tasks is non-programmable since both teaching and research activities are first and foremost unique and non-repeatable forms of service. Teaching and research depend essentially on high levels of individual and small group expertise and creativity which cannot be organized in the same way as those routine activities in which one worker with particular skills can readily be replaced by another with exactly the same skills (Williams, 1995, p. 178). The substance and the nature of academic work give faculty a position of being professional experts who have considerable authority both in information distribution and in decision-making processes. In all of a university’s specialized disciplinary fields, information and decisions about what and how to teach come under the direct supervision of faculty members themselves. To a large extent this occurs because only they are able to oversee their specialized fields (van Vught, 1995, p. 202). This is why the faculty are always likely to have better and more information on the content of their work, and eventually, the quality and quantity of produced teaching and research.

Besides the complexities of work, universities are unquestionably complex and non-programmable in their organizational structures. Because of their loosely coupled structure and knowledge-intensive nature, university organizations are characterized by the diffusion of decision-making power. The decision-making processes are often decentralized and organizational structure in this sense can also be quite fragmented (van Vught, 1995, p. 203). While many administrative and financial decisions are made by the central administration of a university, many of the major decisions concerning the basic production processes are made at the level of basic units. This includes matters such as staffing, curriculum, course content, instructional choice and methods, research decisions and resource use (James & Neuberger, 1981, p. 230; Levin, 1991, p. 242). Also, the fact that universities operate in geographically separate locations decreases the task programmability.

The low programmability tends to create a number of monitoring problems. It guarantees that government monitoring is challenging due to the location of universities, the substantially and technically specialized knowledge they produce, their cultural specificity and the internal
secrecy and fragmentation in diverse operating units. Some behavior-based governance procedures also provide unintended incentives for dysfunctional behavior. For instance, in trying to respond to the high task programmability of universities, both line-item budgeting and formula funding may become overly complex, bureaucratic, time-consuming and expensive procedures. Also, the limitations of time and attention prevent the government from continuously scrutinizing and reviewing the true needs for new or old items. In the case of formula funding, the initial specification and construction of a funding formula is a very complex and detailed process. It often involves high set-up costs in terms of expenditure surveys, appropriate management information, accounting systems etc. Or, if seeking to avoid this, a constructed formula may be too simple and could exclude from the formula essential elements which reflect the true production process (Massy & Hulfactor, 1993, p. 29; Sheehan, 1997, pp. 133-134.)

Formula funding also faces problems with its input and process measures. Input measures, like number of undergraduate or graduate students enrolled does not provide any information about resource use or output quality. On the other hand, some process measures reflecting quality, like high average costs, do not inform on the effectiveness or efficiency of a university. In fact, using them in a formula can lead to conflicting interpretations of what is actually happening inside the university. By one interpretation, high average costs (e.g. staff per student or costs per student) might be taken as an indicator of high quality of teaching processes. If there were a direct relationship between the number of faculty members and the quality of a degree obtained, a higher faculty-student ratio would indeed be associated with outputs of a higher quality. However, because of the informational asymmetries concerned with the academic work and production technology, there is no information on how much effort faculty put into teaching. Also, the faculty-student ratio does not make a distinction between faculty members’ seniority, teaching skills, student quality or the range of effort and time levels directed to teaching and instruction. Therefore, having a larger number of faculty members does not automatically correlate with higher teaching quality. In fact, higher faculty-student ratios might simultaneously indicate two things: inefficient use of resources or high quality teaching with corresponding costs. In addition to conflicting interpretations, the
lack of comparability resulting from horizontal and spatial differen-
tiation also creates a problem for utilizing average measures. Some insti-
tutions or their basic units may be forced to behave in certain ways by
environmental circumstances which are outside their control, without
the full knowledge of the monitoring government. Therefore, average
costs can vary between institutions and their units, making it difficult to
establish virtually anything about relative cost effectiveness. (cf. Cave et
al. 1997, pp. 120-123.)

Different quality assessment procedures have also faced a number
of problems because they are used to untangle the problems associat-
ed with low task programmability. For instance, using the peer review
process has been criticized for being subjective, and that the reviews
might be insufficiently systematic and transparent. Peer review might
also include dishonest reporting when peers have a stake in the evalu-
ation outcome. Peer review can favor large basic units or universities
because these are usually better known and contribute to research in a
large number of sub-disciplines (Koelman & Venniker, 2001, p. 105). In
general, since assessing the quality of output is inherently ambiguous,
it may in fact contribute to inefficiency with respect of the total cost of
higher education (Dill, 1998, p. 363). Continual and repetitive quality as-
sessments can become a burden for both the institutions and individu-
als. In the extreme case, faculty and administrators might feel that there
is insufficient time left to work on quality because they have to provide
evidence of it continuously (Vroeijenstijn, 1995, p. 9).

Choosing more intensive monitoring as a method for overcoming
non-programmability and informational asymmetries would be more
likely to result in the opposite outcome than the one aimed for. An in-
crease in monitoring by the government would be likely to increase lev-
els of administrative work inside both the university and the govern-
ment. Further, it is possible that more efforts to exert control can spawn
additional efforts to circumvent control which in turn could generate
greater control efforts and costs. In the worst-case scenario, the end re-
result could be a vicious cycle of rule-bound and bureaucratic relation-
ships that make universities even less efficient and effective than before
monitoring was introduced. Heavy-handed control might also provide
a signal to universities that they are generally untrustworthy. The rami-
fications of such signals for morale and productivity can be negative.
More intensive monitoring would come at a higher cost and could have an impact on the work morale of faculty and administrators. (cf. Downs, 1967, p. 147; Bohte & Meier, 2000, pp. 180-181; Valentinov 2007, p. 47; pp. 51-52.)

Variable D: Goal conflict. The variable of goal conflict is also essential in determining the trade-off between applying behavior- and output-based governance procedures. The overall rate of goal conflict between the government and universities is not static, but it is different in different contexts. The depth and intensity of goal conflict may vary at different points in time, by different goals and by different tasks. There is a constant tension between the government and universities where some government goals may match those of the universities whereas some might not. Nevertheless, most of the modern day goal conflicts between governments and universities are related to understanding the mission and function of universities. The controversy between the utilitarian principle of accountability and the cultural principles of academic freedom and institutional autonomy seem to dominate many aspects of these conflicts.

In general, it can be assumed that the rate of goal conflict is basically related at least to two major issues: (a) the level of government resources available for universities and (b) the specificity of government goals that are imposed on the universities (cf. Baldrige, 1983, p. 40; Tuckman & Chang, 1988, pp. 623-627). In the situation where there are plenty of resources for universities, i.e. where the amount of government funding is based on the obvious needs of the universities, goal conflicts are likely to be significantly lower. This is because universities are able to satisfy their own official and operative goals by declaring their (either true or fabricated) needs to the resource providing government. Conversely, in times of financial stringency, the rate of goal conflict is likely to increase because fewer and fewer resources are available for universities to satisfy their goals, including the opportunistic ones.

In similar manner, the specificity of government goals is likely to have a direct effect on the rate of goal conflict. The less specified the government goals are, the less will be the goal conflicts and vice versa. For instance, general goals, such as ‘discovering new knowledge through research’, ‘disseminating knowledge through teaching’, ‘preserving
knowledge through scholarship’, ‘finding solutions to social problems’, and ‘increasing freedom, equity and equality of opportunities’ are not likely to raise significant goal conflicts. This is because all of these goals are vague and intangible, and the accomplishment of vague goals usually cannot be directly measured. The fact that goal accomplishment cannot be directly measured allows the university more room to pursue its own official and operative goals. However, more precisely stated and measurable goals like ‘to produce (x) undergraduate degrees and (y) publications in international journals in a year’ are likely to create more goal conflicts, since they are likely to endanger the university’s pursuit of its own private official or operative goals.

If these assumptions are taken together, two extreme ends can be assumed. First, the depth and intensity of government-university goal conflicts is at the lowest level when the universities are able to collect the amount of funding they want, and when government goals are vague enough that their accomplishment cannot be measured. Second, the depth and intensity of these goal conflicts are at the highest level, when universities are not able to collect the amount of funding they want, and when the government goals are so precise that they can be effectively measured (and when they are measured).

If the assumptions presented are correct, it is clear that the most appropriate method for overcoming the various forms of opportunistic behavior is to choose output-based governance procedures. Behavior-based governance arrangements cannot offer effective counter incentives to neutralize the effects which result from goal conflict. On the contrary, behavior-based contracts can be the source of strong disincentives to institutional efficiency. For instance in the case of line-item budgeting, the specific items of expenditure within a budget are quite rigid in that universities have little flexibility in moving resources from one type of spending to another. This means that universities are not allowed to transfer funds from one budget category to another, nor are they allowed to save funds for other uses. Also, the incremental nature of line-item budgets usually leads to add-on budgeting and a vicious spiral of cost growth for government. Existing activities are automatically included in the budget, and given the operative goals and opportunistic behavior of universities, they are likely to be expanded constantly. As a whole, with input-based funding, the government has no satisfacto-
ry way of judging whether the allocated funds are serving its goals, or whether this is happening efficiently and effectively. (cf. Williams, 1995, p. 184; Hughes, 2003, pp. 170-171.)

Variable E: Length of the agency relationship. The last agency variable relates the duration of the government-university relationship to the choice between behavior- and output-based governance procedures. Most of the relationships between the government and universities are long-term and repetitive, especially in exclusively public higher education systems. In long-term relationships, it is likely that the government will be able to learn many things about the behavior and actions of universities. Because of its increased experience, the government will be more able to assess and predict the universities’ behavior and to verify the accountability more readily. Over a long period of time, the government will be able to recognize those universities whose operation and performance somehow differ from the operation and performance of other universities. However, in more exceptional situations, such as in the development of special programs or projects, the relationship between the government and universities can be contrasted with short-term relationships. In these situations, government funding is usually restricted in its purpose and its duration. Also, the contracting forms can be more case-specific than under the regular relationships. (Kivistö, 2005a, p. 12.)

In longer and stabilized relationships, behavior-based governance is certainly more suitable than it is in short-term and unique relationships. Nevertheless, because of the high informational asymmetries, low task programmability, and especially where there are high goal conflicts, the relative advantage of behavior-based governance compared to output-based governance mechanisms may still be too low, even in longer relationships. On the other hand, output-based governance mechanisms suffer measurability and uncertainty problems thereby creating tough decision-making trade-off for the government.

3.6.4 Summary of agency variables

The analysis of the five agency variables presented above can now be summed up. The general nature of both teaching and research outputs
is to a large extent immeasurable and uncertain. The poor measurability is connected to the intangible nature of teaching and research outputs. This creates the definitional problem of what the ‘right’ and ‘true’ outputs of teaching and research are. The possible dysfunctional effects resulting from measurement itself, namely the goal displacement phenomenon, also reduce measurability. The production of teaching and research outputs is also surrounded by uncontrollable uncertainties. On the side of teaching, student behavior and a range of environmental conditions also have a substantial impact on the formation of teaching outputs. On the side of research outputs which may also be affected by student behavior, the greatest uncertainties are related to the specialized nature of research work itself. Both the low measurability and the high uncertainty indicate that the government should make use of behavior-based governance procedures.

In addition to the output problems, government has to face the fact that tasks of higher education are not programmable and their production is likely to include elements that support the occurrence of goal conflicts. The low task programmability of teaching and research tasks results from their production processes which require high levels of individual or small group expertise and creativity. Further complexity-adding elements include the unique and non-repeatable nature of teaching and research services, and fragmented decision-making processes resulting from the loosely coupled structure of universities. On the other hand, high or even moderate goal conflicts can create serious incentive problems increasing the possibility of opportunistic behavior by universities. Goal conflicts grow particularly from the differences between cultural and utilitarian conceptions regarding the mission of universities. In modern day societies surrounded by a utilitarian atmosphere, government governance procedures are often characterized by economic stringency and a higher need for more detailed goals. Therefore, goal conflicts between the government and cultural conceptions supporting universities have become more prevalent.

The low task programmability and high goal conflicts cannot be solved through behavior-based governance procedures. Behavior-based governance mechanisms are constrained either by the lack of incentives they create for efficient and effective production, their complexity / simplicity and by the costs generated by their application. Behavior-
based governance may also cause dysfunctional behavior by creating incentives which can actually promote the opportunistic behavior of universities. Therefore, it can be suggested that the government should use output-based governance mechanisms, which can both bypass the informational asymmetries related to low task programmability and the incentive problems that are related to goal conflicts. Finally, agency variables also imply that length of the agency relationship affects the choice of governance mechanisms. The rationale for this prediction is that in long-term relationships, the government is likely to learn something from the behavior of certain universities and be more willing to use behavior-based governance procedures. Conversely, if the relationship is short-term, the informational asymmetries between government and universities are likely to be higher thus making output-based governance a more attractive choice.

The analysis seems to indicate that both behavior-based and output-based governance methods contain both strengths and weaknesses (Table 3).

Table 3. The choice of governance methods and agency variables

<table>
<thead>
<tr>
<th>Agency variables</th>
<th>Behavior-based governance should be selected, when</th>
<th>Output-based governance should be selected, when</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Output measurability</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>B. Output uncertainty</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>C. Task programmability</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>D. Goal conflicts</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>E. Length of the agency relationship</td>
<td>Long</td>
<td>Short</td>
</tr>
</tbody>
</table>

Agency variables (A) and (B) support the utilization of behavior-based governance because of poor output measurement and output uncertainty, whereas variables (C) and (D) seem to support output-based governance on the basis of low task programmability and high goal conflicts. The support of the last variable (E) is related to length of the agency relationship under examination. Therefore, as a conclusion, it seems that the government faces problems with both types of governance procedure. This means that the government has to choose be-
tween two less than perfect options: either it suffers from problems related to behavior-based governance or it suffers from problems related to output-based governance. It is a matter of concrete context, opinion and political debate which of these problems should be considered to be the ‘lesser evil’.

3.6.5 Agency costs

Agency costs for government are the total sum of the costs resulting from governing universities plus the costs incurred because of the opportunistic behavior of the universities. The total governance costs include the direct costs associated with the governing procedures, but also the indirect costs that are incurred because of the dysfunctional effects they cause. On the basis of predictions indicated by the agency variables (above), it seems that the government will inevitably suffer relatively high agency costs. The only difference is how large these costs can become and the ways in which they are accumulated.

The government faces a trade-off between two costly options: either it attempts to decrease informational asymmetries and pay the costs related to behavior-based governance, or, it reduces goal conflict by choosing the output-based form of governing and pays the agency costs related to output-based governance. Naturally the government can do both by simultaneously introducing a funding formula which contains elements from behavior- and output-based governance. In such a situation however, all the benefits and shortcomings of both behavior- and output-based governance will occur at a magnitude related to the weight they have in the funding formula.

The fact that the government has to choose between two costly options does not mean that the universities are automatically in a good position as agents. Despite their multiple deficiencies, both behavior-based and output-based governance procedures can make the universities’ opportunistic behavior far more difficult. In addition, all the dysfunctional effects of governance procedures are likely to create operating difficulties for universities, regardless of whether a particular university is actually behaving opportunistically or not. Therefore, it seems that the government-university relationship as an agency relationship can even be a ‘lose-lose relationship’, where both the government and universi-
ties lose more than they would have lost without the governance procedures and (potential or actual) opportunistic behavior.

The monetary costs of governance in a given concrete situation are practically impossible to calculate. It is unlikely that government cost calculation systems would be able to count all the costs that are related to the use of a certain type of governance procedures. Nevertheless, these costs can be indirectly estimated and perceived in other than monetary terms. For instance, the cost of governance procedures could be evaluated indirectly as the amount of planning they require to be established and to operate, the number of new employment positions required, or new hierarchies their application creates and the observable or estimated dysfunctions they inflict on the production behavior of the universities (cf. Jensen & Meckling, 1976, p. 323; p. 328). Due to the invisible and unperceivable nature of opportunistic behavior, the costs of detected and undetected opportunism, ‘opportunism costs’, are even more difficult to calculate, although analytically they are possible to distinguish (cf. Vining & Globerman, 1999, p. 647). Nevertheless, as a theoretical concept, they could offer interesting perspectives in speculating on the meaningfulness and effects of the government governance of universities. Hypothetically speaking, if the costs resulting from ungoverned opportunism remain lower than the governing costs of opportunism, the best solution for the government could be to reduce its governing efforts.

3.7 Discussion on the theoretical insights offered by the theory

Agency theory seems to offer a suitable framework to examine government-university relationships in situations where the government needs a certain tasks to be performed, allocates resources to universities for performing these tasks, and decides to govern the task performance. Both of the usual conditions of agency problems, informational asymmetries and goal conflicts seem to be relevant to an examination of government-university relationships. In fact, informational asymmetries can be considered to be an organic part of life inside universities. Academic work is itself inherently surrounded by high information asymmetries, as well as a range of complexities in organizational and
production technology. As a theoretical concept, informational asymmetries increase the understanding of many of the issues that are related to external observation and low transparency of universities’ economic and operative behavior. Most of all, it highlights and helps to systematize the different elements that are blocking or creating obstacles to the monitoring activities of government.

In addition to informational asymmetries, the assumption of goal conflict between the government and universities can be considered relevant. The concept of goal conflict can help to identify those university goals that are not parallel with the assumed or manifested government goals. In addition, along with making the distinction between official and operative goals, the goal conflict assumption guides the focus on issues that are neglected in many other theories or approaches because of their negative nature. Further, the assumption of goal conflict offers an instrument with which to analyze official goals like academic freedom, institutional autonomy and assumed operative goals like pursuing revenue, prestige, or leisure in contrast with the accountability demands of the government. The assumption provides assistance in discerning the relationships and tensions of goals in a more logical and structured manner.

The existence of informational asymmetries and goal conflicts creates theoretically favorable conditions for university opportunism. The problem of adverse selection conceptualizes issues related to the pre-contractual, prospective agency relationships. It helps in discerning the problems and challenges that the government faces when it is choosing a university or universities from the pool of universities to perform a certain teaching or research related tasks. In addition to pointing at problems, agency theory also offers possible solutions for the government and universities to overcome the adverse selection problem. As a whole, the problem of adverse selection focuses on identifying and understanding certain patterns of behavior (e.g. quality assessment) in a theoretical manner, and the motivations that lie behind that behavior.

The other agency problem, the problem of moral hazard, conceptualizes issues related to post-contractual government-university relationships. The moral hazard problem enables a conceptualization of the different forms of individual and institutional level opportunism inside the universities. In addition, it offers governance mechanisms for the
government to overcome problems associated with the various forms of opportunism. Therefore, a range of issues related to practical higher education policy, like funding, verifying accountability, performance evaluation, quality assurance, and government control and governance can benefit from an agency framework and from some of the perspectives that the theory can offer. Agency theory offers one possible theoretical framework for analyzing e.g. why governments are demanding quality assurance mechanisms and why they sometimes choose output-based funding procedures instead of input-based funding procedures. Also, accepting opportunism as one possible explanation might generate a more open and useful discussion and investigation about the productive and economic behavior of universities. By offering theoretical understandings and solutions for the phenomena of inefficiency and cost growth, agency theory is able to underline some of the most topical questions asked by the higher education community.

Agency theory seems to be able to offer unique theoretical views on how difficult it really is for a government to govern universities in practice. It shows that instruments of governance are available, but each of these instruments seems to have its own shortcomings. Along with the concept of agency cost, analysis through agency variables can help to determine the most appropriate governance method for the government in a given context.

As a whole, the theoretical analysis and the operationalizations conducted show that agency theory offers unique insights from academic organizations and their relationship with a resource-providing government. The theory’s framework is generic enough to be able to absorb a wide variety of non-economic concepts from other approaches, like organization theory, public administration, and of course, higher education research in its analyses. But most of all, agency theory is able to provide insights from economic aspects: i.e. from incentives, revenues, costs, inputs and outputs. While economic approaches should not be considered intrinsically as superior to other ‘softer’, non-economic approaches, they do provide perspectives that these other approaches cannot provide (cf. Garvin, 1980, p. 5). Therefore, the usefulness and consistency of agency theory is naturally dependent on the issues under discussion and the importance given to social or economic aspects of the university organizations.
4 GOVERNMENT-UNIVERSITY RELATIONSHIPS AS AGENCY RELATIONSHIPS: EMPIRICAL INSIGHTS

4.1 Case study as a research design for empirical analysis

The empirical part of the study has employed the case study research approach in its research design. Case study is an examination of a specific phenomenon, such as a program, an event, a person, a project site, an institution or a social group (Patton, 1987, p. 147; Merriam, 1988, p. 3). Nevertheless, according Gray (2004, p. 128), one of the key design issues in case studies is the definition of the unit of analysis, and then ensuring that this unit of analysis fits with the research objectives of the study. Unlike many other research designs, case study does not rely on any particular method for data collection or data analysis. Therefore, any and all methods of gathering data can be used in a case study (Merriam, 1988, p. 10; cf. Yin, 1981, pp. 58-59). Nevertheless, in terms of data collection, case study is usually characterized by the use of multiple sources of evidence. The data may include various types of documents, archival records, interviews, field observations, and participant observations (cf. Yin, 1994, p. 80; Gray, 2004, p. 129; p. 135).

The role of the empirical case and the theory can be manifold depending on the chosen perspective; a case under investigation can be utilized to develop, build, clarify, refine, extend or test a theory. As a whole, theory permeates the entire process of case study research. From the initial formulation of the research problem through to the interpreta-

33 Many definitions of ‘case study’ constitute it as a quite flexible and generic tool for conducting research. Merriam (1988, p. 2) states that case study is a basic research design that can accommodate a variety of disciplinary and philosophical perspectives. Indeed, plurality in understanding and defining what case study actually is seems to exist. It has been called or understood as a ‘research strategy’, ‘research design’, ‘research method’, ‘methodology’, and ‘approach’ (see e.g. Merriam, 1988; Yin, 1994; Lukka & Kasanen, 1995; Johnston et al., 1999; Hillebrand et al., 2001; Gray, 2004). On the other hand, some scholars like Stake (1994, p. 236) has argued that case study “is not a methodological choice, but a choice of object to be studied”. Nonetheless, usually case study refers to research that investigates one or more cases in considerable depth (cf. Hammersley & Gomm, 2000, p. 3).
tion of the findings, theory informs the choices one makes. (Merriam, 1988, pp. 57-58; pp. 60-61.) In theory refinement case studies, cases can be utilized either to illustrate a theory’s capacity to illuminate a phenomenon in new or better ways, or to specify the theory by adding greater precision to theoretical constructs and propositions, and rendering the theory into a refutable form. Theory illustration cases can vacillate between the objective of demonstrating the plausibility of a theoretical perspective and applying that perspective in order to develop a unique explanation of a particular case (Keating, 1995, p. 71). Illustrative cases are tied to theoretical inquiry passively only, as a receptacle for putting theories to work, and fortuitously, as a catalytic element in the unfolding of theoretical knowledge (Eckstein, 1975, cited in Keating, 1995, p. 71).

4.1.1 Case study research design in empirical analysis

The empirical analysis used for this study applies case study research design so that the primary role of the chosen empirical case will be used as an illustrative device to refine and illuminate agency theory. More specifically, the case will be utilized for the purpose of producing theoretical analysis to discover the insights which agency theory can offer, as well as revealing the strengths and weaknesses contained in the theory. Accordingly, agency theory will be used to provide the framework for all phases of the study, from data collection and data analysis to the initial formulation and interpretation that constitute the research findings.

According to Gray (2004, p. 139), there are basically two ways in which case study evidence can be analyzed. The first way is to analyze the data on the basis of the original theoretical propositions and the research objectives that flowed from them. The other is to develop a descriptive framework once the case study has been completed. The analysis in this particular study will be conducted in accordance with the first option by analyzing the data from the perspective of agency theory. This means that agency theory can assist the analysis and help in choosing what is worth investigating and what should be ignored. Analysis of the empirical data, which will be also driven by the questions identi-
fied through agency theory, will be conducted whilst keeping in mind the research objective and research questions.

The specific case to be utilized is the implementation of the public policy program entitled *Programme for Increasing Education in Information Industry Fields* (Tietoteollisuuden lisätoimenpideohjelma) during the period 1998 to 2005. This program was launched by the Finnish Ministry of Education (Opetusministeriö) and it was implemented by the Finnish universities. The reasons for selecting the Programme for Increasing Education in Information Industry Fields (later on to be referred as ‘Information Industry Program’ or ‘Program’) include the following. First, the substance and the implementation process of the Information Industry Program seemed to be suitable tools for illustrating agency theory, since the implementation relationship between the Ministry of Education (MoE) and universities fulfilled the three criteria of agency relationship, that is, delegation of tasks, allocation of resources for performing these tasks, and active governing of their implementation. Second, there were sufficient data for empirical investigation. According to Patton (1987, p. 147), the program level case study data could include program documents, program reports, interviews with program participants, observations of the program, and program histories, etc. In accordance with this view, the data available for the research purposes in this study included interviews, Program documents, and the evaluations and reviews of the Program.

The first source of evidence, *interviews*, comprised interviews with two representatives of the MoE. Both interviewees were closely connected to the implementation process of the Program. The involvement of the first interviewee took place at the beginning of the Program. Therefore, this interviewee had detailed information about the first years of Program’s implementation. The second interviewee acted as a project

---

34 Finnish polytechnics also participated in the implementation of the Program. By definition, “[p]olytechnics are multidisciplinary, regional institutions of higher education which emphasise connections with working life and regional development in their operations. They provide professional higher education for expert jobs. In addition, polytechnics carry out research and development which supports working life and regional development and is geared to the industrial structure of the region. (Ministry of Education, 2004b, pp. 4-5.) For the sake of simplicity and due the lack of information about the role of polytechnics in the Program, the focus in this study relates only to the implementation process in universities.
manager for the MoE from 2000 onwards, and in particular, he possessed information relating to the later events of the Program implementation. The second interviewee was the MoE’s contact person for the Program, and he was largely responsible for designing and implementing the MoE’s monitoring procedures for the Information Industry Program. In addition to interviews, some minor Program details were requested via electronic mail (e-mail) from the third MoE official.35

Interviews with the first two mentioned informants were conducted in April–May 2004. The interviews were semi-structured interviews, in which the structure and content of the interview questions were guided by the framework of agency theory. After the interviews, the transcriptions and interpretations derived from the interviews were sent to the both interviewees for inspection in September–October 2004. The interviewees did not seek to edit or interpolate the transcripts or the interpretations that were derived from them.

The second source of evidence consisted of official documents, i.e. letters, announcements, resolutions, performance agreements, and other literal sources of information, directly or indirectly concerning the Program implementation. These documents contain important details of the events and governance processes that took place during the Program implementation. They also provided assistance to in formulating specific questions for the conducted interviews.

The third source of evidence was composed of the evaluation reports and reviews of the Information Industry Program. Four works, by Hara et al. (2000), Leppimäki et al. (2001), Hautala (2004), and Kivistö & Aarrevaara (2005) provide this evidence. The most extensive of these is clearly the review by Kivistö and Aarrevaara. Due its focus and extensiveness, this review has been utilized more often than the others.36

35 For the sake of their anonymity, the two interviewees and the one e-mail informant have been designated in the text as ‘Informant A / B / C’.

36 The main part of the data used in this review consisted of material reported by the universities to the Ministry of Education and from the interviews with six representatives (from central administration and departments) of three case universities (Helsinki University of Technology, University of Jyväskylä, Åbo Akademi University) (Kivistö & Aarrevaara, 2005, p. 11).
4.1.2 Reliability and validity

The question of reliability and validity are major concerns for all types of empirical research. Every researcher wants to contribute knowledge that is believable and trustworthy (cf. Merriam, 1988, p. 183). Regardless of the type of research, reliability and validity are concerns that can be approached through careful attention to a study’s conceptualization and the way in which the data were collected, analyzed and interpreted (Merriam, 1988, p. 165).

Conditions of reliability in case studies are met if the findings and conclusions of one researcher can be replicated by another researcher doing the exactly same case study (Gray, 2004, p. 138). The goal of reliability is to minimize the error and bias in a study (Yin, 1994, p. 36). The reliability of this empirical case and its analysis are verifiable by examining the logic of analysis and sources of empirical evidence. The utilization of the agency theory framework can be observed by all readers, and the logic of the analysis conducted is open to the readers’ scrutiny. Also, most of the sources of literal empirical evidence are available to the public and therefore the information they contain can be verified. By comparing the utilization of agency theory in the context of analyzing empirical data, it can be stated that the reliability of the case analysis is clearly assessable by readers.

The validity of research can be divided into internal validity, external validity, and construct validity (Yin, 1994, p. 33; Gray, 2004, pp. 135-138). Internal validity deals with the question of how one’s research findings match reality (Merriam, 1988, p. 166). Internal validity can be ensured through a range of strategies, for instance by using methodological triangulation (multiple sources of evidence, multiple researchers, and multiple methods), ‘member checks’\(^37\), long-term observation, peer examination, and participatory modes of research. Two of these strategies can also be identified in this case study. The utilization of multiple sources of evidence – interviews, documents, and Program evaluations and reviews – took place, as was described earlier. Also, interview transcriptions and interpretations were confirmed by the described member.

\(^{37}\) ‘Member checks’ mean that the data and interpretations are taken back to the people from whom they were derived and asking them if the results were plausible (Merriam, 1988, p. 169).
checks, that is, by taking the data and interpretations back to be checked by the interviewees themselves.

*External validity* is concerned with the extent to which the findings in one particular study are generalizable beyond the immediate case study (Yin 1994, p. 35). According to Hillebrand et al., analytical / theoretical (not statistical) generalization – i.e. declaring the results of a case study valid for a larger population – can be done on the basis of structural similarity and logical argumentation (Hillebrand et al., 2001, p. 653; see also Lukka & Kasanen, 1995). Structural similarity refers to the assumption, that the results of a case study are valid for all identical situations. However, the argument that results are valid for structurally similar situations is not sufficient for generalizing the results, since the results may be caused by coincidence and therefore need not occur in similar situations (Hillebrand et al., 2001, p. 653). Therefore, logical similarity is also needed. Logical argumentation states that the theoretical generalization is based on the internal logic, i.e. on the identification of real (causal, teleological, or other) mechanisms which function as tendencies in the production of phenomena (Lukka & Kasanen, 1995, p. 78). This discussion can also be adapted for assessing the external validity of this case study. It can be stated that the generalizability of the results of the empirical case of this study can be extended to cover other cases and situations which are both structurally similar, and which follow a similar pattern of logical argumentation. That is, to cover other cases and situations where the utilization of agency theory is consistent with the manner of analysis which was conducted in this case study.

The last issue that can be related to the issue of case study validity, *construct validity*, refers to the establishment of correct operational measures for the concepts being studied (Yin, 1994, p. 33). The problem with construct validity is usually related to the difficulty of giving a precise definition of the constructs being investigated. This again leads to the danger of the impreciseness of the definitions leaving too much room for the researcher’s personal impressions of the definition, which may not necessarily be the same as those of the informants’ (cf. Gray, 2004, p. 136). Construct validity can be increased through using multiple sources of evidence, establishing a “chain of evidence”, and having the draft case study report reviewed by the key informants (Yin, 1994, pp. 34-35; Gray, 2004, p. 136). The problems related to construct validity in
this case study have been reduced by applying the multiple sources of evidence, and therefore what was said about this under the question of internal validity, also applies here. In addition, it should be noticed that agency theory as a guiding framework reduces the construct validity problems by offering what Yin calls the observable chain of evidence. Indeed, agency theory and the way it is utilized can be considered as providing an explicit chain of evidence by which external observers are allowed to “follow the derivation of any evidence from the initial research questions to the ultimate case study conclusions” (Yin, 1994, p. 98).

4.2 Agency relationship

The implementation process of the Information Industry Program will be analyzed as an agency relationship between the MoE and universities in the following sections. The first of the two sections following describes the details of the Program, and the second analyzes this description from the perspective of agency theory.

4.2.1 Case description

The Information Industry Program was launched by the MoE in 1998. The Program was started because of a shortage of skilled labor in the information industry which was caused by the rapid growth of the information industry sector in 1990s. The objective of the Program was to satisfy the labor shortage by increasing the amount of teaching in undergraduate and graduate degrees (Ph.D.) in information industry fields (i.e. electrical engineering, information technology, electronics, telecommunications, data processing, and new media). More specifically, this was accomplished through three separate measures:

(1) by increasing the student enrollment in professional upgrading programs,

---

38 In the Finnish higher education system, the master’s degree is basically the first degree in universities and it is therefore here considered to be an undergraduate degree.
(2) by increasing the student enrollment in undergraduate programs, and
(3) by increasing the number of full-time graduate student places available at graduate schools. (Kivistö & Aarrevaara, 2005, pp. 12-14.)

Universities participating in the implementation of the Information Industry Program were free to choose which specific information industry-related fields they could channel the increased enrollments and new graduate school places.39

Professional upgrading programs (muuntokoulutusohjelmat) were two-year master’s programs, which were aimed at degree-holding students who wanted to upgrade their earlier degree either from a lower level degree (bachelor’s degree) to higher level degree (master’s degree) or from another subject specialization to an information industry-related subject. The specific aim of the professional upgrading programs was to increase rapidly the number of undergraduate degree holders in the information industry sector (Hara et al., 2000, p. 10). The undergraduate programs (peruskoulutusohjelmat) were full five-year master’s programs. They were aimed at students who did not previously have a higher education degree (Kivistö & Aarrevaara, 2005, pp. 12-14.) The last measure, increasing the number of graduate student places at graduate schools (tutkijakoulujen tutkijakoulupaikat), took place in temporary, four-year doctoral programs. Graduate students in these graduate schools worked full time (on a regular salary) whilst they wrote their doctoral dissertations. The aim was for these students to complete their doctoral dissertation in four years. Graduate schools operated within departments of a single or more universities. (cf. Gibbons et al., 2004, p. 21; Dill et al., 2006, pp. 37-40.)

In a period of 1998-2005, the total direct funding allocated to universities was approximately 173.7 million euros. Of this amount, the share for professional upgrading programs was approximately 70 million euros, with the expansions of undergraduate degree enrollments being funded to the tune of 64 million euros (Table 4).

39 It seems that the ‘information industry –fields’ was understood quite broadly, since some universities allocated their enrollment increases to the programs operating in a field of social sciences. Nevertheless, these programs had usually more or less direct connection to information industry field (like e.g. marketing and finance).
Table 4. Direct funding of Information Industry Program in 1998-2005

<table>
<thead>
<tr>
<th>Funding component</th>
<th>M€</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional upgrading programs</td>
<td>70.4</td>
<td>40.5</td>
</tr>
<tr>
<td>Expansions in undergraduate enrollment</td>
<td>64.3</td>
<td>37.0</td>
</tr>
<tr>
<td>Improving the prerequisites of teaching and research in information industry fields</td>
<td>23.4</td>
<td>13.5</td>
</tr>
<tr>
<td>Graduate schools</td>
<td>15.6</td>
<td>9.0</td>
</tr>
<tr>
<td><strong>Total direct funding in 1998-2005</strong></td>
<td>173.7</td>
<td>100</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kivistö & Aarrevaara, 2005, p. 15)

Additional graduate school places were funded with grants of approximately 15.6 million euros. In addition, a block grant allocation called ‘Improving the prerequisites of teaching and research in information industry fields’ of 23.4 million euros was granted to universities from 2004.40 In addition to the direct funding, universities also received indirect funding from the basic funding model on the basis of number of master’s and doctoral graduates they have produced. The amount of this funding is unknown.

4.2.2 Case analysis

Within the Finnish Government, the MoE was the responsible public bureau for implementing the Information Industry Program. Therefore, here it is considered to be the government-principal. At the general level, the MoE was responsible for setting the objectives and allocating the funds to universities. According to the MoE’s general announcement (published in English):

The Ministry of Education is responsible for preparing Government matters in its sector, for ensuring appropriate operations and for steering relevant

---

40 Universities also received funds from the European Social Fund (ESF) to establish professional upgrading programs. Although related to the Information Industry Program, ESF funding has been excluded from the analysis because it represents only a marginal share of the total funding (5.7 million euros) and because of the differences in its implementation and funding processes (see Kivistö & Aarrevaara, 2005).
administration. The primary means to this end for the Ministry are resource allocation, legislation and information. (Ministry of Education, 2004a, p. 9.)

The Academy of Finland (Suomen Akatemia) also participated in the implementation process by assessing the graduate schools. The Academy of Finland is an agency that operates under the administrative authority of the MoE and therefore here it has been included as a part of the government-principal.

The 17 universities who participated to the implementation process of the Information Industry Program are considered here as agents. Ten of these universities were multi-faculty institutions, three of them were universities of technology, three were schools of economics and business administration, and one was a fine arts academy. All of these universities were public. Their legal status was public and they obtained almost all of their funding for teaching degree programs from public funds (namely the state budget). Finnish university legislation neither allowed universities to charge tuition fees from undergraduate or graduate students, nor did it allow universities to restrict the time of study.

In the Information Industry Program, the specific tasks of universities were to enhance educational activities leading to university degrees in the information industry fields (Informant A). Both the enrollment increases in professional upgrading programs and undergraduate programs could be categorized as teaching tasks, whereas the organizing of training of additional graduate students included both teaching and research activities. The agency relationship between the MoE and universities included both hierarchical and contractual elements. As a typical feature of hierarchical relationships, universities were viewed as public agencies operating under the administrative control of the MoE and implementing Finnish Government policy. The general framework of the relationship comprised policy decisions and the legislation:

The universities are governed by the Universities Act . . . . Each field of study in universities is governed by a separate decree. . . . The main policy guidelines and development targets are determined at a general level in the Development Plan for Education and Research which is adopted by the Government for a six-year period every four years. (Ministry of Education, 2004a, pp. 4-5.)
The Ministry of Education . . . determines the distribution of educational responsibilities between the universities by means of decrees issued for each field of study separately. (Ministry of Education, 2004a, p. 8.)

On the other hand, the relationship also included contractual elements such as the utilization of formal and explicit performance agreements, which are an essential part of the MoE’s ‘management by results’ system (tulosohjausjärjestelmä). These agreements specified the rights and responsibilities in terms of enrollment numbers, outputs and the amount of funding:

The performance agreements concluded between the Ministry of Education and the universities determine quantitative and qualitative targets, the resources needed to achieve these targets, the monitoring and evaluation of outcome, and further development of operations. The university target outcomes are set for a three-year period. In the intervening years, the targets are reviewed and confirmed and resources are determined for the following year. (Ministry of Education, 2004a, p. 9.)

In performance negotiations between the MoE and universities, the terms of exchange were largely set by the MoE and the existing legislative framework, but it was also possible for universities to adopt the

---

41 The ‘management by results’ system is a performance-based budgeting / funding system, where objectives and targets set for the universities and the funds needed for their implementation are determined in negotiations between the MoE and universities. The funding allocated by the MoE to universities during the performance agreement period 2004-2006 comprised the following (as a percentage of operational expenditure in 2004): ‘Core funding’ (89.4 %), ‘Financing of national tasks’ (1.5 %), ‘Financing of national programs’ (4.7%) ‘Project funding’ (1.9 %), and ‘Performance-based funding’ (2.4 %). Given the figures above, it can be deduced that ‘Core funding’ was clearly the main funding component of the management by results system. The majority of the ‘Core funding’ (in 2004-2006 approximately 70%) was allocated on the basis of degree targets set for the number of master’s degrees and doctorates (coefficient 2/3) and the number of actual master’s and doctoral degree graduates (coefficient 1/3). Over 99% of the ‘Core funding’ (in 2004-2006) was provided to the universities in a block grant to be used at their discretion (see Ministry of Education, 2001; 2004a).
‘exit’ choice and influence the number of tasks and amount of funding they were willing to include among their responsibilities.42

4.3 The problem of adverse selection

The implementation process of the Information Industry Program included several aspects that can be related to the adverse selection problem. Before starting the implementation, the MoE had to make a decision about how to allocate the tasks and funds between universities. Because of the existing informational asymmetries and assumed self-interest of the universities, it was possible that the MoE could choose the wrong types of universities (i.e. low willingness & capability) as their agents. The first of the following two sections describes the allocation processes of the enrollment increases and the graduate school places. The subsequent section contains an analysis of these processes from the perspective of agency theory.

4.3.1 Case description

To a large extent the MoE made allocation decisions about the enrollment increases in professional upgrading programs and undergraduate programs at the beginning of the year 1998 (Informant B). In February 1998, the MoE wrote a draft proposal concerning the enrollment increases between participating universities and circulated it to universities for their comments. After receiving the universities’ comments, the MoE revised its original proposal and finalized the enrollment allocation between participating universities (Opetusministeriö 1998; Informant A).

Table 5 shows that almost half (43.7%) of the enrollment increases were allocated to only three universities: the Helsinki University of Tech-

---

42 As a whole, the funding of the Information Industry Program can be considered to be an example of what has been called a ‘Program oriented’ funding methodology. In this, the government chooses which programs are to be funded on the basis of their economic and social significance. Like in the Information Industry Program, program oriented funding includes contracts and university tendering processes, where universities compete for the right to provide the specified number of student places to be funded (Jongbloed, 2004, pp. 8-9).
Table 5. Funded enrollment increases under the Information Industry Program in 1998-2003

<table>
<thead>
<tr>
<th>University</th>
<th>Professional upgrading programs</th>
<th>Undergraduate programs</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki University of Technology</td>
<td>580</td>
<td>1030</td>
<td>1610</td>
<td>17.4</td>
</tr>
<tr>
<td>University of Oulu</td>
<td>549</td>
<td>790</td>
<td>1339</td>
<td>14.5</td>
</tr>
<tr>
<td>Tampere University of Technology</td>
<td>330</td>
<td>760</td>
<td>1090</td>
<td>11.8</td>
</tr>
<tr>
<td>Lappeenranta University of Technology</td>
<td>290</td>
<td>390</td>
<td>680</td>
<td>7.3</td>
</tr>
<tr>
<td>University of Jyväskylä</td>
<td>360</td>
<td>260</td>
<td>620</td>
<td>6.7</td>
</tr>
<tr>
<td>University of Turku</td>
<td>340</td>
<td>255</td>
<td>595</td>
<td>6.4</td>
</tr>
<tr>
<td>University of Vaasa</td>
<td>365</td>
<td>220</td>
<td>585</td>
<td>6.3</td>
</tr>
<tr>
<td>University of Helsinki</td>
<td>270</td>
<td>300</td>
<td>570</td>
<td>6.2</td>
</tr>
<tr>
<td>Åbo Akademi University</td>
<td>200</td>
<td>250</td>
<td>450</td>
<td>4.9</td>
</tr>
<tr>
<td>University of Tampere</td>
<td>255</td>
<td>180</td>
<td>435</td>
<td>4.7</td>
</tr>
<tr>
<td>University of Kuopio</td>
<td>140</td>
<td>150</td>
<td>290</td>
<td>3.1</td>
</tr>
<tr>
<td>University of Joensuu</td>
<td>125</td>
<td>150</td>
<td>275</td>
<td>3.0</td>
</tr>
<tr>
<td>Helsinki School of Econ. and Business Adm.</td>
<td>140</td>
<td>60</td>
<td>200</td>
<td>2.2</td>
</tr>
<tr>
<td>Turku School of Econ. and Business Adm.</td>
<td>125</td>
<td>60</td>
<td>185</td>
<td>2.0</td>
</tr>
<tr>
<td>Swedish School of Econ. and Business Adm.</td>
<td>100</td>
<td>40</td>
<td>140</td>
<td>1.5</td>
</tr>
<tr>
<td>University of Art and Design Helsinki</td>
<td>65</td>
<td>50</td>
<td>115</td>
<td>1.2</td>
</tr>
<tr>
<td>University of Lapland</td>
<td>75</td>
<td>-</td>
<td>75</td>
<td>0.8</td>
</tr>
<tr>
<td>Total enrollment increases in 1998-2003</td>
<td>4309</td>
<td>4945</td>
<td>9254</td>
<td>100</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kivistö & Aarrevaara, 2005, p. 19; p. 27)

In addition, Helsinki University of Technology (17.4%), the University of Oulu (14.5%), and Tampere University of Technology (11.8%). In addition, Lappeenranta University of Technology (7.3%) and the University of Jyväskylä (6.7%) also received a substantial share of the total enrollment increase. The MoE’s exact decision-making criteria did not include any systematic or profound attempts to analyze the productive capabilities of universities. Nevertheless, as part
of their decision, the MoE acknowledged the disciplinary profile of universities, as well as the existence and the magnitude of educational programs that were already operating in accordance with the framework of the Information Industry Program (Informant A).

The Information Industry Program also included the allocation of additional graduate student places to graduate schools. The allocation was carried out in two phases, in 1999 (60 additional places) and 2002 (100 additional places) (Kivistö & Aarrevaara, 2005, p. 28). The allocation process was integrated into the MoE's regular graduate school system funding process. This process differed from the allocation of the enrollment increases of the professional upgrading and undergraduate programs in three respects. First, the funding was intended to cover the salaries of graduate students, not the educational costs of graduate schools. Second, the allocation decision of the MoE was informed by an assessment conducted by the Academy of Finland. Third, the focus of these assessments was the graduate schools bidding for the places, not the universities these schools were located in. The allocation process started with correspondence to universities and the Academy of Finland (in 1998 and in 2000), in which the MoE announced that graduate schools could apply for funding (Opetusministeriö, 1998; 2000b). After the announcements, the Academy of Finland requested that graduate schools applying provide data for assessment of the schools (see Tables 6 and 7). After universities submitted their applications and the

### Table 6. Performance assessment criteria of graduate schools

<table>
<thead>
<tr>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Improvement of quality of graduate training.</td>
</tr>
<tr>
<td>B. Improvement of the efficiency of graduate training and lowering the age at which graduates submit their dissertation.</td>
</tr>
<tr>
<td>C. Professionalization of researchers' careers.</td>
</tr>
<tr>
<td>D. Improving orderliness of the doctoral education.</td>
</tr>
<tr>
<td>E. Increase in the co-operation between universities and research institutes.</td>
</tr>
<tr>
<td>F. Clarification of the responsibilities of research work supervision.</td>
</tr>
<tr>
<td>G. Growth of international education and research co-operation.</td>
</tr>
</tbody>
</table>

(Source: Kivistö & Aarrevaara, 2005, p. 28)
data requested, the Academy’s Research Councils, operating as peer review bodies, assessed the graduate schools on the basis of their operation plans, and, where possible, existing performance and results. In the assessments of the past performance and results, Research Councils applied the following assessment criteria (A-G).

After the assessment, Research Councils graded the applicant graduate schools by using the following four-grade scale: (1) ‘excellent’, (2) ‘good’, (3) ‘satisfactory’, and (4) ‘poor’ (Kivistö & Aarrevaara, 2005, p. 28). The assessment results with grades were then submitted to the Council of the Academy, which in turn made the Academy’s official assessment proposal to the MoE. After receiving this assessment information, the MoE made the actual decision about allocating graduate student places (Table 7). Although the decision about the graduate school places was based on the Academy’s assessment, the MoE also acknowledged other aspects in its decision-making premises. For instance, national science policy and regional policies might have also affected to the allocation

<table>
<thead>
<tr>
<th>Coordinating university</th>
<th>Increase in 1999</th>
<th>Increase in 2002</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Helsinki University of Technology (9)</td>
<td>18</td>
<td>29</td>
<td>47</td>
<td>29.4</td>
</tr>
<tr>
<td>University of Oulu (2)</td>
<td>20</td>
<td>12</td>
<td>32</td>
<td>20.0</td>
</tr>
<tr>
<td>Tampere University of Technology (3)</td>
<td>9</td>
<td>14</td>
<td>23</td>
<td>14.4</td>
</tr>
<tr>
<td>Åbo Akademi University (3)</td>
<td>4</td>
<td>15</td>
<td>19</td>
<td>11.9</td>
</tr>
<tr>
<td>Lappeenranta University of Technology (2)</td>
<td>7</td>
<td>4</td>
<td>11</td>
<td>6.9</td>
</tr>
<tr>
<td>University of Tampere (1)</td>
<td>-</td>
<td>10</td>
<td>10</td>
<td>6.3</td>
</tr>
<tr>
<td>University of Helsinki (4)</td>
<td>-</td>
<td>9</td>
<td>9</td>
<td>5.6</td>
</tr>
<tr>
<td>Helsinki School of Economics (1)</td>
<td>-</td>
<td>5</td>
<td>5</td>
<td>3.1</td>
</tr>
<tr>
<td>University of Jyväskylä (1)</td>
<td>2</td>
<td>-</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>University of Art and Design Helsinki (1)</td>
<td>-</td>
<td>2</td>
<td>2</td>
<td>1.3</td>
</tr>
<tr>
<td>Total increase (27)</td>
<td>60</td>
<td>100</td>
<td>160</td>
<td>100</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kivistö & Aarrevaara, 2005, p. 29)
decision. Nevertheless, it is the general view that the regional policy aspects could not over-ride the Academy of Finland’s assessment results (Valtiontalouden tarkastusvirasto, 2003, p. 25). It is likely that this principle was also applied in the case of the Information Industry Program, although it was not possible to confirm this.

Table 7 shows that 160 graduate school places were allocated to 27 graduate schools operating in 10 universities. The greatest proportion of the places were granted to graduate schools coordinated by the Helsinki University of Technology (29.4%), the University of Oulu (20%), Tampere University of Technology (14.4%), and Åbo Akademi University (11.9%). Six other universities which coordinated 10 graduate schools received only 24.4% of the additional graduate school places.

4.3.2 Case analysis

As a whole, this process of allocating the enrollment increases to professional upgrading and undergraduate programs can hardly be considered equivalent to the proper screening and signaling procedures proposed by agency theory. The main reason for the MoE not to screen was that there was an urgent need to start implementing the Information Industry Program (Informant A). Since the final purpose objective of the Program was to respond to the employment needs of the information industry, and since these needs were highly sensitive to rapidly changing economic fluctuations, it was very important for the MoE that universities started to educate the new students as soon as possible.

The true willingness of bidding universities – that is, the true motivation level inside the university to accomplish the tasks they were bidding for – was largely unknown to the MoE. Nevertheless, there seems to have been a great willingness to participate in the Program. The universities preferred to seek higher rather than lower enrollment increases. In fact, according to the MoE, none of the negotiating universities was ever heard to complain that MoE had offered them too high an enrollment number (Informant A). Seemingly, participation in the Program was seen as a way to gain additional funding from the MoE. For some universities, the Program indeed brought substantial increases in their funding (Informant B). From issues related to capacity, the teaching quality of bidding universities was largely unknown before making the
allocation decision (Informant A). The MoE was also constrained by the lack of information and knowledge about which specific information industry sectors and disciplines would be of best value to the Finnish national economy (Informant B). The fact that the selected 17 universities were operating in geographically different parts of Finland also increased spatial differentiation and therefore informational asymmetries. Although the MoE was aware of the need for skilled employees from the information industry sector in general, it did not have specific information about the differences in the demand and supply of the information industry labor force in the operating environments of particular universities (Informant A). The informational asymmetries in the existing production technology of universities also constrained the MoE. It did not have exact information about technical production capabilities (e.g. sufficiency of staff and existing facilities) at its disposal. (Informant A).

It is certain that the allocation process of the enrollment increases allowed for savings to be made on both the MoE’s screening costs and the universities’ signaling costs, and thereby total agency costs were reduced. It is uncertain, however, whether the MoE made the allocations to the appropriate universities, and in case that it had not, whether the agency costs of selecting the wrong type of university exceeded the savings made on screening costs. From the perspective of agency theory, the allocation process did not prevent the risk of selecting the wrong type of university. Due the existing informational asymmetries about both the willingness and capacity of the universities to follow the Program’s objectives, a real possibility of choosing the wrong type of university existed. That is, inefficient and ineffective institutions could have been chosen to undertake the necessary tasks. The reported general willingness of universities to receive extra funding allocations could indicate their desire to be successful and faithful program implementers. On the other hand, there is nothing to suggest that universities were not merely maximizing the size of their government grants. The MoE’s decision not to screen universities’ productive capabilities systematically was understandable, due to the need of fast Program implementation, but in practice, this decision meant that the MoE had to make the allocation decision almost blindfolded. Nevertheless, the fact that the MoE based its allocation decisions partly on the information based on the universities’ existing disciplinary profiles indicates that the allocation decision also had some rational basis.
The allocation of additional graduate school posts differed in many respects from the situation with the professional upgrading and undergraduate programs. On the whole, the assessment procedures conducted by the Academy of Finland seem to have reduced considerably the informational asymmetries concerned with academic work, organizational structures, products and production technology, as well as the range of efficiency and effectiveness aspects that were related to these informational asymmetries. On the basis of application data about the operation plans of the graduate schools applying to be part of the

Table 8. Monitoring information concerning the operation plans of applying graduate schools

1 Description of the graduate school
1.1 Name and the status (previously funded or new) of the graduate school
1.2 Description of how the graduate school is organized
1.3 Name and the duties (and résumé) of the graduate school director
1.4 Names of the members of the graduate school’s steering group and their duties
1.5 Participating universities and other organizations
1.6 A short description of the mission of the graduate school
1.7 Special explanation of the need for the graduate school (e.g. estimated need for doctoral graduates in the field in question)

2 Action plan
2.1 A report on how the graduate school intends to realize the objectives of the graduate school system
2.2 A report concerning supervision and teaching arrangements
2.3 A report on how the graduate school advances the removal of female researchers’ career obstacles and how it promotes balance between the genders in the field in question (2001 only)
2.4 A report concerning the graduate school’s international co-operation arrangements (2001 only)

3 Resource plan
3.1 Number of graduate student places to be applied for
3.2 Estimated income and expense of the graduate school, with specifications
3.3 Information on the number of full-time graduate students

(Source: Adapted from Suomen Akatemia, 1998; 2001)
Program (see Table 8), information regarding both the willingness and capability aspects was available.

For instance, it may have been possible to deduce something from the authenticity of the applicant’s desire to be a successful graduate school from the merits and positions of graduate school directors and members of each graduate school’s steering group (points 1.3 and 1.4). It can be assumed that persons possessing high prestige would be unlikely to participate in the organization of graduate schools which they knew to be unsuccessful in the first place. In addition, the form (e.g. specificity and accuracy) and the substance (e.g. innovative, but realistic) of descriptions of the operating idea of the graduate school (point 1.6) as well as the presumed societal demand for the graduate school (point 1.7), were all likely reveal something from the applicants’ existing motivation level. A low level of motivation of the applicants was also more likely to produce low quality applications.

In addition, the information regarding the way graduate school intended to realize the objectives of the graduate school system (point 2.1) was likely to reveal something about the productive capabilities of the applicants. If this information was connected to the information about projected resources and expenditures (points 3.1-3), the aspects of economic capacity for effective operation were also likely to be revealed.

On the basis of application data from already existing and performing graduate schools, the information was more detailed and extensive (see Table 9). Due the fact that the assessment concerned the graduate schools’ actual performance and results, the information on both the willingness and capability aspects was also more reliable. For instance, information regarding the production processes of graduate schools, such as the courses arranged (point II.2.b), and the faculty-student ratio (points II.2.a / II.1.b) was available. Application data also provided information on outputs. For example, the number of dissertations completed and doctoral degrees granted (points II1.b and III.1), the range of publications produced (point III.2), the employability of Ph.D. graduates (point III1.d) allowed conclusions regarding the graduate schools’ performance to be made.

The data enabled the construction of output-based performance indicators and thereby the calculation or estimation of the graduation rate, and the average graduation time (from points II.1.b, II.1.c, III.1). Also, av-
Table 9. Monitoring information about the performance of existing graduate schools

I Description of the graduate school
(As in Table 8)

II Activities of the graduate school
II.1 Graduate student information
   a) Selection methods and description of the graduate student selection process, the number of available graduate student places, the number of graduate student applications received
   b) A list of all graduate students
      - Name, gender, date of birth, previous qualification
      - Enrollment year, time studied at the graduate school
      - University, field of study, dissertation supervisor
      - Year in which doctoral degree was awarded or estimated time taken up until the public defense of the dissertation
      - The funding of full-time and part-time graduate students at the graduate school
   c) Drop-out numbers and reasons for dropping-out (if known)
   d) Workplace placement (employment) of the Ph.D. graduates

II.2 Information about the supervision and teaching arrangements
   a) List of supervisors: name, degrees held, and position held at the university or other research institute
   b) Courses arranged: name, credits, hours and the number of students who attended
   c) Information concerning the working of the graduate students and courses taken / conferences participated in abroad
   d) Other information concerning supervision and teaching arrangements

II.3 Funding of the graduate school
   a) Funding from the MoE (graduate student places, coordinator posts)
   b) Funding from the Academy of Finland with specifications
   c) Funding from the university and any other funding (including foreign)

II.4 National and international co-operation
   a) Description of how co-operation and coordination is realized at both the national and international levels (universities, other graduate schools, business sector etc.)

III Information concerning scholarly / scientific publication activity of graduate students
III.1 Dissertations completed at the graduate school: name of the author, title of the dissertation, date of public defense of the dissertation, dissertation grade (only in 1998)
III.2 Publication activity of graduate students (articles in peer reviewed national and international scholarly journals, monographs published in Finland or abroad)
III.3 Number of graduate students’ conference presentations and posters

IV Self-evaluation of the graduate school
IV.1 How the graduate school has succeeded in realizing the objectives of the graduate school system?
IV.2 What obstacles have impeded the accomplishment of the objectives?
IV.3 How the graduate school has succeeded in organizing the teaching and supervision arrangements?
IV.4 Co-operation inside the graduate school (2001 only)
IV.5 Development suggestions for the graduate school system in general

(Source: Adapted from Suomen Akatemia, 1998; 2001)
verage cost measures like the amount of funding divided by the number of dissertations or publications produced (points II.3 / III.1-2), degrees per supervisor, and publications or conference presentations per graduate student (points II.2.a / II.1b; III.2-3 / II.1.b) could be calculated. In addition to this quantitative information, the application data enabled qualitative analysis on selection methods and the processes of graduate student selection, dissertation grades, the academic merit of supervisors and steering group members, and the extent of international co-operation. However, it remains unknown which specific parts of the application data the Research Councils actually analyzed or how they actually did it.

Despite the relatively extensive screening of information, it seems that it was still theoretically possible for the MoE to allocate additional posts to bad types of graduate school. First, because of the existing informational asymmetries, the Academy of Finland and the MoE did not have an appropriate low cost means for inspecting the authenticity and truthfulness of the data provided. This was especially the case in assessing the operation plans of the graduate schools (Table 8), since a part of the application information was based on predictions or assumptions rather than on existing arrangements or documented performance (see Table 8, sections 2. ‘Action plan’ and 3. ‘Resource plan’). From the perspective of agency theory, graduate schools might have had incentives to behave opportunistically and alter the application data, if their total costs of misrepresenting their type (i.e. costs related to fabricating the application data and the costs related to the risk of getting caught) were lower than the expectation of the total benefits that could possibly be gained by getting more graduate student places. Second, one must also remember all the limitations of using performance information and indicators as information sources. For instance, using indicators such as the faculty-student ratio or average cost per doctoral degree / publication / conference presentation may have indicated high / low effectiveness as well as high / low efficiency, depending only on the chosen interpretation. Also, the usage of information regarding the graduation rate and time, and graduate employment as decision-making criteria would have been dubious because of output, environmental and student-based uncertainty factors.
It seems, nevertheless, that the screening process conducted by the Academy of Finland reduced significantly the danger of selecting the wrong types of graduate school. The Academy’s assessment covered many of the essential inputs, process and outputs related to graduate training. It included both quantitative and qualitative indicators enabling the substantial assessment of both teaching and research activities of the graduate schools applying to participate in the Program. In addition, the four-scale grading described provided a kind of a shortlist for the MoE, since the MoE allocated graduate school places only to those graduate schools that were graded as ‘excellent’ or ‘good’. In addition, the agency costs resulting from the screening process were likely to be relatively low, since it was integrated into the regular assessment process of the MoE’s ordinary graduate school system. Of course, as was the case in the allocation of the enrollment increases in professional upgrading and undergraduate programs, the question of whether the costs of selecting the wrong type of university exceeded these savings remains unknown.

4.4 The problem of moral hazard

Agency relationship between the MoE and universities also led to the possibility of different moral hazard problems arising. First, two of the following four sections describe and analyze the governance procedures that were utilized during the implementation. In the last two sections, the results of the Information Industry Program are described and analyzed from the perspective of agency theory.

4.4.1 Case description: Program governance

The MoE governed the implementation process of the Information Industry Program by funding universities through both input-based and output-based funding procedures. Input-based funding allocations of professional upgrading programs were made between 2000 and 2004, and in undergraduate programs between 1998 and 2003. Nevertheless, in the case of the funding of undergraduate programs, the universities persuaded the MoE to continue providing support to the undergradu-
ate enrollment increases by allocating an additional lump sum of funding under the title ‘Improving the prerequisites of teaching and research in information industry fields’ from the year 2004 to 2006 (Informant C). The input-based funding of the additional graduate school places (salaries of the graduate students) took place in two four-year periods between 1999 to 2002 and 2002 to 2005. The transition of the undergraduate programs to the output-based funding system took place from the year 2004 onwards. (Kivistö & Aarrevaara, 2005, p. 14.) Professional upgrading programs were not included within the sphere of output-based funding (degree targets / realized degrees), instead being funded totally on the basis of inputs.

Input-based funding was established specifically to govern the enrollment increases in the professional upgrading and undergraduate programs. Funding the increases in the professional upgrading programs and undergraduate programs was based on enrollment numbers. Although the funding was first and foremost intended to cover the costs of increasing the number of enrollments, the funding was not earmarked in any way, leaving universities free to allocate internally the funding as they saw appropriate. Together with the enrollment-based funding, monitoring data were gathered through university reporting requests (see Table 10). Through the reports, both quantitative information (e.g. enrollment, graduation time, degrees) and qualitative information (e.g. reporting the problems related to the implementation, co-operation between universities and information industry companies) were gathered. Reporting was requested annually between 2000 and 2004. The exact content of the reporting request was subject to small variations in different years. In addition, universities were monitored through MoE site visits to some of the universities participating in the Information Industry Program. However, the main function of the visits was formative, not summative (Informant B). In addition to this special reporting

43 The number of enrollments to be funded was fixed, and any extra enrollment above that were funded at universities’ own expense. The cost on which the MoE based its funding on in professional upgrading programs was 7500 euros a year per student for two years. In the case of undergraduate programs, the equivalent sum was 5000 euros a year per student for five years (Kivistö & Aarrevaara, 2005, p. 14-15).

44 The MoE also received the same quantitative information about the enrollments in and graduation numbers from the professional upgrading and undergraduate programs from Statistics Finland (Informant B).
and site visits, the MoE was also able to utilize the evaluation results of undergraduate programs (see Hara et al., 2000) that took place in 1999. Seven undergraduate programs offered by six universities participating in the Information Industry Program were evaluated. The evaluation was organized by the Finnish Higher Education Evaluation Council (FINHEEC). Also, a general review of the professional upgrading programs (see Leppimäki et al., 2001) provided additional information to the MoE. Additional general information was available from the KOTA database.45

In the case of increases in the number of graduate school places, the governance procedures were rather different. After the extensive assessments conducted in years 1998 and in 2001, graduate schools were only obliged to report their activities and results annually.46

The output-based funding, on the other hand took place through the ‘management by results’ system and its main funding component, ‘Core funding’. Universities participating in the Information Industry Program also received funding from the ‘Core funding’ component, since universities could include the degrees from undergraduate programs and graduate schools within their general degree targets. However, as was mentioned previously, the degrees or degree targets from professional upgrading programs were not intended to be included to the sphere of degree-based funding.

4.4.2 Case analysis: Program governance

The input-based funding together with the monitoring procedures which were connected to this funding seem to be analogous to behavior-based governance procedures. Nevertheless, what is important from the perspective of agency theory is to acknowledge which of the moni-

45 KOTA is a statistical database maintained by the Finnish Ministry of Education. Since its inception in 1981, it has contained data describing university performance by institutions and by educational field. It contains data on applications and admissions, students, degrees, duration of studies, graduate placement, teaching staff, and costs per performance area, and scholarly publication. (see http://kotaplus.csc.fi:7777/online/Etusivu.do?lng=en)

46 Unfortunately, this specific information, as well as the specific content of the yearly reports, was not available.
onitoring procedures were directly connected to the amount of funding universities received. In the case of the professional upgrading and undergraduate programs, only the monitoring of actual enrollment numbers had such an effect. If the realized enrollment numbers turned out to be substantially lower than the number agreed on (approximately 10 student places), the MoE reduced funding to that university by that amount in the following year’s funding allocation (Informant B).

Although university reporting did not have direct effects on the resource levels of universities, the reporting requests themselves covered wide areas of performance information on professional upgrading and undergraduate programs. As can be observed from Table 10, the most important quantitative information concerned the enrollment numbers (inputs) (points 1.a-b, 2.a), number of degrees awarded (outputs) (points 1.c and 2.b) and estimated average time for professional upgrading students to be granted their degree (point 1.d). As a whole, these reporting requests seem to have covered many of the key areas of high informational asymmetries. Informational asymmetries resulting from academic and administrative work were reduced by collecting specific reporting information on the educational arrangements of professional upgrading programs (point 10.b, c, d). Clearly, reporting information concerning informational asymmetries resulting from complexities related to spatial differentiation were reduced by answers to questions concerning universities’ environmental conditions, such as the recruitment situation of teachers (point 4), and the regional co-operation with the industry (point 8). Information asymmetries regarding production technology were reduced by the receipt of requested information about the internal resource allocations of Program funding (points 9 and 10.a).

As such, the annual monitoring of graduate schools did not equate with post-contractual behavior-based governance since no significant resource allocation decisions were connected with the assessment results flowing from these reports. Further, the assessments conducted by the Research Councils of the Academy of Finland discussed earlier were clearly pre-contractual since they took place before allocating the additional graduate school places took place in 1998 and 2001.

Output-based funding was organized through the management by results system and its main funding component, ‘Core funding’.
Table 10. Monitoring information on the performance of professional up-grading programs and undergraduate programs from 2000 to 2004

1. Professional upgrading programs
   a) Number of applications (in 2000-2002)
   b) Number of enrollments (in 2000-2004)
   c) Number of master’s degrees awarded (in 2001-2004)
   d) Estimated average time to receiving degree (in 2001-2004)

2. Undergraduate programs
   a) Total enrollment number of the program and enrollment funded from the Information Industry Program (in 2000-2004)
   b) Number of master’s degrees awarded in a field of study (in 2000-2003)


4. Recruitment situation of teachers for the professional upgrading and undergraduate programs and information on how universities have specifically advertised their programs (2000 only)

5. Suggestions concerning the need for further measures for Information Industry Program (in 2001-2004)


7. Evaluation of how the professional upgrading programs have operated in the Information Industry Program (in 2001-2004)

8. Co-operation of universities with information industry companies
   a) Description of co-operation activities (in 2001-2004)
   b) Number of personnel from information industry companies who participated in teaching activities (in 2000-2004)
   c) Donations received (e.g. funds, equipment) (in 2000-2004)

9. Question of how the funding for the Information Industry Program allocated in the reporting year was utilized (2003-2004)

10. Special questions concerning professional upgrading programs:
    a) How the resources of Information Industry Program were allocated in 1999-2002? (in 2002-2004)
    b) How has the student intensity of enrollees in professional upgrading programs been improved? What is the estimated graduation time of students? (in 2002-2004)
    c) How has the credit transfer process in recognition of prior study operated and developed? (in 2002-2003)
    d) Which problems seen in the operation of professional upgrading programs are the biggest? (in 2002-2004)

(Source: Adapted from Opetusministeriö, 2000a; 2001; 2002; 2003; 2004)
Although the government provided specific funds to cover the cost of new undergraduate and graduate school places under the Information Industry Programme, universities were still able to count these places within their overall degree targets and realized degrees from which their ‘Core funding’ was calculated. In this way, universities were also directly under the influence of the output-based incentives the ‘core-funding’ component created. However, the fact that two-thirds of this funding was allocated on the basis of master’s and doctoral degree targets rather than realized outputs, made this procedure a less ‘pure’ form of output-based governance. In the standard form of output-based governance, funding is based completely on realized outputs. The summary of the analysis of Program governance described is presented below in Table 11.

Table 11. Categorization of the MoE’s governance methods used in the implementation of the Information Industry Program

<table>
<thead>
<tr>
<th>Behavior-based governance</th>
<th>Output-based governance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Governance arrangement</td>
<td></td>
</tr>
<tr>
<td>Input-based funding plus reporting:</td>
<td>Output-based funding: Degree-based formula, 2/3 targets, 1/3 realized master’s and doctoral degree graduations</td>
</tr>
<tr>
<td>Enrollment-based input-formula</td>
<td></td>
</tr>
<tr>
<td>Program measures</td>
<td></td>
</tr>
<tr>
<td>Professional upgrading programs</td>
<td>Undergraduate programs</td>
</tr>
<tr>
<td>Undergraduate programs</td>
<td>Graduate schools</td>
</tr>
</tbody>
</table>

In the following sections, governance choices have been examined in light of the five agency variables (A-E). For each variable, a brief analysis is presented and its implications with regard to the funding methods chosen for the Information Industry Program.

Variable A: Output measurability. Given the specific tasks of the Information Industry Program, the outputs the MoE expected were relatively simply to measure: the number of master’s and doctoral degrees awarded in information industry fields (Informant A). Of course, one could always criticize this output for disregarding the socio-cultural functions of the programs and schools and suggest that master’s and doctoral degrees were not the real outputs of the Information Industry Program.
However, from the perspective of the MoE, the definition of outputs was certainly easier in the specific context of the Information Industry Program than in defining the measurable outputs of universities in general. Of course, using the number of degrees awarded as a measurable output included the danger of dysfunctional effects appearing, like increasing the number of degrees awarded at the expense of degree quality, since the quality of the degrees awarded was to a large extent unknown to the MoE.

The analysis based on this agency variable lends support to the MoE’s decision to fund undergraduate programs and universities’ graduate schools through the funding of master’s and doctoral degrees. On the other hand, from the perspective of quality, the issue seems to be more trivial because the quality of the process and outputs was not assessed in any summative manner. This danger was lower in the case of graduate schools because of the assessments of the Research Councils. Although not being a form of post-contractual governance, prospective assessments were likely to have a positive impact on the performance of graduate schools. The MoE also seemed to avoid the mistake of believing that a higher number of output indicators could provide a more complete picture of universities’ performance, since the more indicators there are, the less important any one of those indicators becomes. In this sense, the decision to use the master’s and doctoral degrees as the only output indicator seems have been a correct choice.

Variable B: Output uncertainty. As was concluded earlier, most uncertainties in the production activities of universities are related to student behavior. Universities have no direct control over this. In the case of the Information Industry Program, this was especially relevant with students in professional upgrading programs, but also with the students in undergraduate programs and graduate schools. Contemporary Finnish university legislation did not allow universities to charge tuition fees. In addition, universities had no legal means to require students to graduate or to force them to make progress through their studies. Although enrolled as full-time students who were expected to graduate within two years, a large proportion of the students in professional upgrading programs were full-time employees spending their days outside the university. In addition, the motivation level of these students was
usually reported to be lower than students in undergraduate programs (Kivistö & Aarrevaara, 2005, p. 21). The reason for this was that it had been relatively easy to be accepted into a professional upgrading program due the increased supply of places. Therefore, it is likely that many students enrolled in these programs only because it was easy to get in. The situation was different with graduate students, who were likely to be motivated relatively well because of the salary they were to receive for four years, which provided a financial incentive for them to attempt to complete the doctoral degree within that four-year period.

Other uncertainties were caused by the differences in geographic and economic environments. Because of the labor-intensive growth that took place in the information industry sector, universities also suffered from a shortage of skilled teachers. According to the universities, it was very hard to recruit competent teachers especially during the first years of Program implementation. Many universities also reported that they were suffering from a lack of proper equipment and teaching facilities because of the rapid increase of student enrollments they had faced. (Kivistö & Aarrevaara, 2005, pp. 21-22; see also Leppimäki et al., 2001.)

As a whole, the analysis of output uncertainty seems to indicate that the Program outputs were in many respects uncertain, especially in the professional upgrading programs and undergraduate programs, but to lesser extent in graduate schools also. This conclusion gives more support to the use of enrollment-based funding for professional upgrading programs and undergraduate programs. Nevertheless, the fact that two-thirds of the output-based ‘Core funding’ was based on targets of the number of graduates and only one-third on the actual number of graduates also made the use of output-based governance slightly less risky for universities, especially in the case of doctoral degrees and graduate schools.

Variable C: Task programmability. The task of increasing the number of master’s and doctoral graduates can be considered to be as non-programmable as most other tasks conducted by universities. For instance, due to the informational asymmetries between academic work and the universities’ production technology, the MoE did not possess information on how much teaching effort was put into the professional upgrading and undergraduate programs, how pedagogically talented their teachers were, or whether laboratories equipped in a certain way were
really necessary for proper teaching conditions. Further, despite the reporting request about the internal resource allocations in universities (see Table 10, points 9 and 10a), the MoE would have preferred to have more and better information about student progression and on the issue of whether the universities allocated the MoE funds to the activities they were intended for, that is, for the teaching of professional upgrading students. (Informant B).

Various elements of spatial differentiation reduced the possible level of task programmability, as well. For instance, some universities received more donations from information industry companies than others, partly because of their geographical location near the facilities of these companies. During the years 1999 to 2001, twenty-three information industry companies finalized a significant donor project (worth 5.9 million euros) consisting of funding and equipment which included donations to only three universities: to the Helsinki University of Technology, to the Tampere University of Technology, and to the University of Oulu. Other smaller donor programs and individual donation projects also occurred: twelve universities that participated in the Information Industry Program reported that they had accepted donations from a range of stakeholders. (Kivistö & Aarrevaara, 2005, pp. 30-32.) Although the MoE monitored approximately donations (see Table 10, point 8.c), it did not have information concerning the relative differences of the productivity effects these donations might have had.

Typical of all of the productive behavior of the universities, the task programmability of the Information Industry Program was low in many ways. Therefore, the choice of degree-based funding as the basis for funding undergraduate programs and graduate schools was probably a beneficial choice. The fact that the MoE used a simple input-based formula instead of a complex one to fund professional upgrading and undergraduate programs also was a correct choice from this perspective. On the other hand, the problem with a solely enrollment-based formula lies in its simplicity and lack of productive incentives. The enrollment-based formula did not provide any information about the efficiency of resource use nor did it create incentives for improving the quality of processes or outputs. Therefore, the situation of professional upgrading programs can be seen as the most problematic of the three, since they were excluded from the degree-based funding.
Variable D: Goal conflicts. The overall rate of goal conflict between the MoE and universities during the implementation of the Information Industry Program is difficult to establish empirically. However, as was proposed earlier, it can be assumed that the rate of goal conflict can be related on at least two issues. The first issue is the level of government resources available to universities. In the situation where there are plenty of resources for universities, i.e., where the amount of government funding is based on the self-manifested needs of the universities, goal conflicts are likely to be significantly lower. This is because universities are able to satisfy their own official and operative goals by declaring their (either true or fabricated) needs to the resource providing government. In times of financial stringency, the rate of goal conflict is likely to increase because fewer resources are available to universities to satisfy their official and operative goals, including the opportunistic ones.

From the fact that virtually all universities were keen to increase their funding share before and during the Program implementation (Informant A; Informant B), it can be deduced that the needs of universities seem to have been greater than the Program funding allocated. From the perspective of assessing the existence of goal conflicts, it does not matter whether the needs of universities were fabricated and opportunistically presented or whether they were a part of the normal, non-opportunistic survival strategy of under-funded universities. Regardless of their exact state, the conclusion which can be drawn is the same: goal conflicts were likely to exist because of resource scarcity.

The second issue that can be related to the rate of goal conflict is basically concerned with the specificity of the MoE goals imposed on the universities. As was proposed, the more specific the imposed goals, the more likely it is that there will be more severe goal conflict. General goals are not likely to lead to significant goal conflict because it is not easy to observe or measure their possible lack of fulfillment. This again is believed to allow universities more room to pursue their own official and operative goals, opportunistic and non-opportunistic alike. However, it is questionable whether this assumption was valid in the case of the Information Industry Program. Although the Information Industry Program can be considered to have imposed specific goals and detailed responsibilities on universities, universities usually understood the MoE’s need to monitor the implementation process. One pos-
sible explanation was that the total monetary value of the Information Industry Program was so significant (Informant A; Informant B).

The analysis of goal conflicts described seems to indicate the possibility of the existence of goal conflicts on the basis of resource scarcity, but not on the basis of goal specificity. This implies that both the use of input-based funding and process monitoring and output-based based funding gain support from this agency variable.

Agency variable E: Length of the agency relationship. The main part of the Information Industry Program was implemented during the seven-year period from 1998 to 2005. Of course, determining whether this was a long or a short term relationship depends on the chosen standard of comparison. It was certainly longer than standard project funding which usually takes place within the three-year performance period in the management by results system. As one might expect from a long-term relationship, the MoE was able to learn more and more things about universities’ behavior and actions as the implementation progressed (Informant B). This also happened in the case involving the professional upgrading programs. Table 10 showed that the reporting requests were much more detailed from 2002 and 2003, when the poor results of the 2000-2001 enrollment increases started to become more evident. On the other hand, the Information Industry Program was exceptional in its financial magnitude and unique in its substance (Informant A). This was especially evident with the professional upgrading programs, which had not been utilized on such a large scale before the launching of the Information Industry Program. From this perspective, the MoE did not have previous experience in monitoring special programs such as the Information Industry Program. Therefore, despite the developments that took place in monitoring, the MoE was less experienced in constructing its governance procedures than it was in the case of standard projects. For this reason, it was possible that the MoE had not been able to determine as readily what the results of a successful implementation would look like when taking into consideration the exceptional content and its relationship to the given environmental conditions.

According to agency variable (E), behavior-based governance is likely to be more suitable in longer relationships than in short-term relationships. Although the implementation period of the Information
Industry Program might be considered to have been long, the content of the Program was exceptional. From this perspective, the use of enrollment-based funding can be called into question. Therefore, applying a funding model which is partly based on the number of graduations probably would have been an advantageous choice, especially in the case of professional upgrading programs.

The results of the analysis which was conducted are summarized in Table 12. As can be seen, the MoE’s choice of governance methods for professional upgrading programs was highly supported through one agency variable, received medium support through two variables, and no support through two variables. Governance of the undergraduate

Table 12. The choice of governance methods and agency variables

Behavior-based governance: Professional upgrading programs, Undergraduate programs.
Output-based governance: Undergraduate programs, Graduate schools.

<table>
<thead>
<tr>
<th>Status of agency variable</th>
<th>Agency variable support</th>
<th>Variable support for MoE’s governance decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>High output measurability</td>
<td>Output-based governance</td>
<td>Professional upgrading programs: No support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate programs: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate schools: High</td>
</tr>
<tr>
<td>High output uncertainty</td>
<td>Behavior-based governance</td>
<td>Professional upgrading programs: High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate programs: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate schools: No support</td>
</tr>
<tr>
<td>Low task programmability</td>
<td>Output-based governance</td>
<td>Professional upgrading programs: No support</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate programs: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate schools: High</td>
</tr>
<tr>
<td>Medium goal conflicts</td>
<td>Behavior-/Output-based governance</td>
<td>Professional upgrading programs: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate programs: High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate schools: Medium</td>
</tr>
<tr>
<td>Medium length of agency relationship</td>
<td>Behavior-/output-based governance</td>
<td>Professional upgrading programs: Medium</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Undergraduate programs: High</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Graduate schools: Medium</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>High support</th>
<th>Medium support</th>
<th>No support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Professional upgrading programs</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Undergraduate programs</td>
<td>2</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Graduate schools</td>
<td>2</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

162
program was highly supported through two agency variables, and re-
ceived medium support through three other variables. The governance 
of graduate schools was highly supported through two agency vari-
ables, medium support from two other variables and no support from 
another variable. The basic explanation for these variations lies in the 
differences in the governance methods. Professional upgrading pro-
grams were governed only through behavior-based governance meth-
ods whereas undergraduate programs and graduate schools were also 
governed through output-based governance methods. The support of 
output-based governance was high in the case of two agency variables 
(output measurability and low task programmability) and medium in 
the case of the other two variables. Instead, behavior-based governance 
according to which professional upgrading programs were governed, 
found high support only from one agency variable (output uncertainty) 
and medium support from two other agency variables (goal conflicts, 
length of the agency relationship).

4.4.3 Case description: Program results

As a result of the Information Industry Program, universities enrolled 
over 5091 students in professional upgrading programs, although the 
funding for the Information Industry Program was sufficient for only 
4309 enrollments (see Table 13). This means, that universities exceeded 
the funded enrollment numbers by 782 students. Tampere University 
of Technology enrolled 418 students more than it received funding for 
from the MoE. Also the enrollments at another ten universities exceeded 
the funded number, including e.g. the University of Jyväskylä (+94); the 
Swedish School of Economics and Business Administration (+84), and 
Lappeenranta University of Technology (+66). Nevertheless, in enroll-
ment numbers some universities were below the number of funded 
places. The University of Lapland (-37), the University of Tampere (-14), 
the University of Art and Design Helsinki (-6), and the Turku School of 
Economics and Business Administration (-2) all agreed to take more en-
rollments than the number which eventuated.

By the beginning of 2005, a total of 1010 degrees had been awarded 
within the professional upgrading programs. The total graduation rate 
of professional upgrading programs was only 23.4%. Although some
universities were able to achieve good or satisfactory graduation rates (such as the Swedish School of Economics and Business Administration (81.0%), University of Joensuu (68.8%) Lappeenranta University of Technology (64.5%), Tampere University of Technology (51.2%), and the University of Tampere (49.8%)), the overall result seems very low. By the spring of 2005, nine out of seventeen universities had achieved a graduation rate of less than 15%.

The increase in enrollments of undergraduate students was also higher than planned. The Information Industry Program funding was

<table>
<thead>
<tr>
<th>University</th>
<th>Funded/Total enrollment</th>
<th>Difference</th>
<th>Degrees Awarded</th>
<th>Graduation % of funded enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Swedish School of Econ. and Business Adm.</td>
<td>100/184</td>
<td>+84</td>
<td>81</td>
<td>81.0</td>
</tr>
<tr>
<td>University of Joensuu</td>
<td>125/142</td>
<td>+17</td>
<td>86</td>
<td>68.8</td>
</tr>
<tr>
<td>Lappeenranta University of Technology</td>
<td>290/356</td>
<td>+66</td>
<td>187</td>
<td>64.5</td>
</tr>
<tr>
<td>Tampere University of Technology</td>
<td>330/748</td>
<td>+418</td>
<td>169</td>
<td>51.2</td>
</tr>
<tr>
<td>University of Tampere</td>
<td>255/241</td>
<td>-14</td>
<td>127</td>
<td>49.8</td>
</tr>
<tr>
<td>University of Art and Design Helsinki</td>
<td>65/59</td>
<td>-6</td>
<td>23</td>
<td>35.4</td>
</tr>
<tr>
<td>University of Kuopio</td>
<td>140/184</td>
<td>+44</td>
<td>44</td>
<td>31.4</td>
</tr>
<tr>
<td>University of Jyväskylä</td>
<td>360/454</td>
<td>+94</td>
<td>103</td>
<td>28.6</td>
</tr>
<tr>
<td>Turku School of Econ. and Business Adm.</td>
<td>125/123</td>
<td>-2</td>
<td>17</td>
<td>13.6</td>
</tr>
<tr>
<td>University of Vaasa</td>
<td>365/365</td>
<td>0</td>
<td>40</td>
<td>11.0</td>
</tr>
<tr>
<td>Åbo Akademi University</td>
<td>200/207</td>
<td>+7</td>
<td>22</td>
<td>11.0</td>
</tr>
<tr>
<td>Helsinki School of Economics</td>
<td>140/144</td>
<td>+4</td>
<td>14</td>
<td>10.0</td>
</tr>
<tr>
<td>Helsinki University of Technology</td>
<td>580/628</td>
<td>+48</td>
<td>38</td>
<td>6.6</td>
</tr>
<tr>
<td>University of Oulu</td>
<td>549/571</td>
<td>+22</td>
<td>31</td>
<td>5.6</td>
</tr>
<tr>
<td>University of Turku</td>
<td>340/377</td>
<td>+37</td>
<td>19</td>
<td>5.6</td>
</tr>
<tr>
<td>University of Lapland</td>
<td>75/38</td>
<td>-37</td>
<td>4</td>
<td>5.3</td>
</tr>
<tr>
<td>University of Helsinki</td>
<td>270/270</td>
<td>0</td>
<td>5</td>
<td>1.9</td>
</tr>
<tr>
<td>Total</td>
<td>4309/5091</td>
<td>+782</td>
<td>1010</td>
<td>23.4</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kivistö & Aarrevaara, 2005, p. 19. Graduation information is based on the situation either on the end of the year 2004 or in the beginning of the year 2005.)

universities were able to achieve good or satisfactory graduation rates (such as the Swedish School of Economics and Business Administration (81.0%), University of Joensuu (68.8%) Lappeenranta University of Technology (64.5%), Tampere University of Technology (51.2%), and the University of Tampere (49.8%)), the overall result seems very low. By the spring of 2005, nine out of seventeen universities had achieved a graduation rate of less than 15%.

The increase in enrollments of undergraduate students was also higher than planned. The Information Industry Program funding was
to cover the enrollment of 4945 undergraduate students, but universities exceeded this by 791 students (see Table 14). As was the case with the professional upgrading programs, the highest enrollments occurred again at the Tampere University of Technology (+497), Lappeenranta University of Technology (+136), and the Swedish School of Economics and Business Administration (+110), who clearly exceeded the funded enrollment target. The University of Turku (+75) and five other universities also enrolled more undergraduate students than they were funded for. At the other end of the scale, five universities including the University of Oulu (-127), the Helsinki University of Technology (-30), the Turku School of Economics and Business Administration (-9), the

Table 14. Funded and total enrollment of undergraduate programs in 1998-2004

<table>
<thead>
<tr>
<th>University</th>
<th>Funded / Total enrollment</th>
<th>Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tampere University of Technology</td>
<td>760/1257</td>
<td>+497</td>
</tr>
<tr>
<td>Lappeenranta University of Technology</td>
<td>390/526</td>
<td>+136</td>
</tr>
<tr>
<td>Swedish School of Economics and Business Adm.</td>
<td>40/150</td>
<td>+110</td>
</tr>
<tr>
<td>University of Turku</td>
<td>255/330</td>
<td>+75</td>
</tr>
<tr>
<td>Helsinki School of Economics</td>
<td>60/105</td>
<td>+45</td>
</tr>
<tr>
<td>University of Tampere</td>
<td>180/215</td>
<td>+35</td>
</tr>
<tr>
<td>University of Kuopio</td>
<td>150/180</td>
<td>+30</td>
</tr>
<tr>
<td>University of Art and Design Helsinki</td>
<td>50/69</td>
<td>+19</td>
</tr>
<tr>
<td>Åbo Akademi University</td>
<td>250/266</td>
<td>+16</td>
</tr>
<tr>
<td>University of Helsinki</td>
<td>300/300</td>
<td>0</td>
</tr>
<tr>
<td>University of Vaasa</td>
<td>220/220</td>
<td>0</td>
</tr>
<tr>
<td>University of Joensuu</td>
<td>150/147</td>
<td>-3</td>
</tr>
<tr>
<td>University of Jyväskylä</td>
<td>260/257</td>
<td>-3</td>
</tr>
<tr>
<td>Turku School of Economics and Business Adm.</td>
<td>60/51</td>
<td>-9</td>
</tr>
<tr>
<td>Helsinki University of Technology</td>
<td>1030/1000</td>
<td>-30</td>
</tr>
<tr>
<td>University of Oulu</td>
<td>790/663</td>
<td>-127</td>
</tr>
<tr>
<td>Total</td>
<td>4945/5736</td>
<td>+791</td>
</tr>
</tbody>
</table>

(Source: Kivistö & Aarrevaara, 2005, p. 27)
University of Joensuu (-3), and the University of Jyväskylä (-3) enrolled fewer students than they received funding for.

The performance information on the number of undergraduate degrees awarded is not as comprehensive as was the case with professional upgrading programs. Since the first increases occurred in autumn 1998, and the estimated graduation time from undergraduate programs was five years, the first graduations from the 1998 enrollments were expected in 2003. The last enrollment increases were allocated in 2003, and therefore the actual relationship between the increase in degrees awarded and the resources allocated cannot be evaluated comprehensively until 2008 at the earliest (Kivistö & Aarrevaara, 2005, p. 28). Nevertheless, some preliminary conclusions can be drawn about graduations from a sample taken from the graduation numbers of seven universities in 2003 and 2004.47 The number of undergraduate degrees awarded increased in comparison to the situation in 1998 (see Table 15). However, this increase in 2003 and 2004 seems to have been lower that what might have been expected, compared with the total allocations made in 1998 and 1999. The number of degrees awarded in 2003 was 52 greater than the enrollment allocation in 1998, but in 2004, the universities awarded 121 degrees fewer than suggested by the enrollment increase in 1999. The total difference after 2004 was 69 degrees fewer than were the enrollment increases were in 1998 and 1999.48

The performance results of the graduate schools are also limited, and they cover only the assessment results of 12 of the 14 graduate schools that received additional graduate student places in 1999. Based on the average figures presented in the assessments conducted by the Research Councils of the Academy of Finland, it can be concluded that the performance of graduate schools offering student places within the information industry fields improved slightly between 1998 and 2002. This improvement occurred in co-operation between universities and research

---

47 These seven universities were Helsinki University of Technology, Lappeenranta University of Technology, Tampere University of Technology, University of Helsinki, University of Kuopio, University of Tampere, and Åbo Akademi University. Unfortunately, the data from the other nine universities did not allow reliable calculations to be made (Kivistö & Aarrevaara, 2005, p. 26n).

48 It is possible that the degree numbers of the years 2003-2004 consist also degrees of students who were enrolled before 1998.
institutes (criterion E), in clarification of the responsibilities of research work supervision (criterion F), in international education and research co-operation (criterion G), and in improving the orderliness of doctoral education (criterion D). However, the assessment results also showed some negative trends. This was the case with the quality of graduate schools and their researcher training (criterion A), professionalization of researchers’ careers (criterion C); and the efficiency of graduate training and lowering the age at which graduates submit their dissertation (criterion B). Nevertheless, these increases and decreases did not have effects to the overall assessment grades of graduate schools. (Kivistö & Aarrevaara, 2005, p. 28.)

Table 15. Development of the number of undergraduate degrees in seven universities in years 2003 and 2004

<table>
<thead>
<tr>
<th></th>
<th>1998</th>
<th>1999</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1) Enrollment increase due to the Information Industry Program</td>
<td>200</td>
<td>420</td>
</tr>
<tr>
<td></td>
<td>1998</td>
<td>2003</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(2) Degrees awarded</td>
<td>1204</td>
<td>1456</td>
</tr>
<tr>
<td>(3) Degrees produced in comparison to 1998 degree level</td>
<td>+252</td>
<td>+299</td>
</tr>
<tr>
<td>(4) Difference between (1) and (3)</td>
<td>+52</td>
<td>-121</td>
</tr>
</tbody>
</table>

(Source: Adapted from Kivistö & Aarrevaara, 2005, p. 27).

4.4.4 Case analysis: Program results

The occurrence of opportunistic behavior in human beings, whether it takes place individually or collectively, is very difficult to prove empirically. It is practically impossible from outside the universities to identify with certainty the exact nature, magnitude and frequency of moral hazard behavior because of its ulterior and its unpleasant nature. For this
reason, even suspecting that someone has behaved opportunistically apparently needs solid evidence. Therefore, the following sections do not claim to say anything absolutely certain about universities’ behavior. Rather, they attempt to analyze and problematize the range of forms of moral hazard behavior that might have been involved in the implementation process of the Program. Therefore, deriving conclusions which are too far reaching from the results of these problematizations towards either opportunistic or non-opportunistic behavior should be avoided.

Despite the various difficulties discussed above, it is possible to find indirect means to examine the presence of moral hazard behavior. Regardless of the many measurement problems, relative differences in universities’ productivity assessed in terms of rates of efficiency and effectiveness might also indicate something that can also be interpreted as an outcome of universities’ moral hazard behavior. Of course, when assessing the productivity level, opportunism is only one possible explanation for lower performance. Other possible non-opportunistic factors, such as uncontrollable productive geographic or economic conditions (i.e. output uncertainty), genuine mistakes and deficiencies in productive know-how may also explain the poor results.

As a whole, the actions and operation of universities in the Information Industry Program left the MoE with a positive view (Informant B). However, the MoE’s satisfaction with the results of the Program seems to have varied between the three measures. The enrollment increases in professional upgrading programs did not fulfill the expectations they were subjected to (Informant B). On the other hand, the impact of the enrollment increases in undergraduate programs was considered positive (Informant A; Informant B). The increases in the number of graduate school places in doctoral programs were considered to have started to develop positively (Informant A). Nevertheless, from the perspective of the MoE’s representatives, there was a theoretical possibility that universities could have behaved opportunistically during different phases of the Program implementation, although this was very difficult to prove (Informant A; Informant B).

There were, however, some indications of cross-subsidization activity, since it was found that the resources universities received from the MoE were not always channeled to the ‘factory floor’, that is, to the teaching departments and to the professional upgrading and undergradu-
ate programs (Informant B). Because of the informational asymmetries regarding the complex production technology of the universities, it was unknown (a) what was cross-subsidized and (b) by how much. For this reason, it is not clear whether the cross-subsidization influenced the quality and effectiveness of professional upgrading and undergraduate programs. For instance, it is likely that many universities used the funding provided to fund professional upgrading and undergraduate programs to pay for overheads (e.g. around 5-15%) (see Hosia, 2001, pp. 51-53). These overheads may have eventually served the interests of the MoE, for example, in the form of equipping teaching facilities with new and better equipment. On the other hand, it could spend opportunistically on some other activity, which would not be directly beneficial to the quality of the Program, like, say, hiring more academic or administrative staff who were not involved directly or indirectly in the Program’s implementation.

As was concluded earlier, the productivity of the professional upgrading programs does not seem to have been very good on the basis of results shown in Table 13. By the year 2005, the total graduation rate of 23.4% indicates that some universities had serious problems in getting students to graduate from their professional upgrading programs. How much this result indicates low efficiency and effectiveness, and whether the possible inefficiencies and ineffectiveness resulted from moral hazard behavior, can not be established. What seems to be clear is that there were no opportunistic attempts to distort the performance information by presenting degree results in too positive a light, not the least on the part of those universities which did not perform well. Also, the fact that eleven universities were over-enrolled by 782 students to be taught at their own expense can also be interpreted as a genuine attempt to increase the graduation rate calculated from the funded enrollment. Of course, this argument does not support those universities whose graduation rate was lower than the average, and for which the total enrollment was the same as or even below the funded level.

Nevertheless, evidence that indicates ineffectiveness is available. There were clear quality problems in student selection processes. Some

49 It is possible that the final number of graduates will rise in the years which follow. But even if the number of graduates doubled, which is very unlikely, the graduation rate (< 50%) could still be considered relatively low.
universities enrolled students in their professional upgrading programs when those students’ basic training did not meet the eligibility requirements of professional upgrading programs. The unofficial target in the credit transfer process was to allow approximately 100 credit points for the earlier degree. However, some universities enrolled students who were able to get only 70-80 credits from their earlier degree, and some enrolled students were granted as little as 10 credit points for their earlier studies/degree (Kivistö & Aarrevaara, 2005, p. 21).

In theory, it was possible that some universities could have attempted to increase their revenue by getting as high enrollment numbers as possible into their professional upgrading programs, and then hope that those students would quit their studies. Because of the enrollment-based funding without output-based funding incentives, active students represented a cost, whereas passive and ‘drop-out’ students represented a cost saving. This kind of opportunism was not likely, since in the long run this could also backfire by causing a decline in public reputation. Also, the MoE did not find evidence to support this type of opportunistic pursuit of revenue, although the additional funds offered by the MoE might sometimes have attracted this type of behavior by universities (Informant A). This conclusion is also backed by student opinions that argued that some universities attempted to increase student progress by lowering the course requirements (Leppimäki et al., 2001, p. 49). Of course, this type of behavior lowers the quality of the education offered, and as such it includes the possibility of another type of opportunism, namely achieving a higher graduation rate and shorter graduation time, perhaps in order to secure the university’s reputation.

A more serious form of opportunism would have taken place if the universities had included those degrees specially funded through the professional upgrading programs in with their performance agreement proposals, in order to receive output-based funding also. This would have been contrary to the MoE’s intention. However, this would be possible, since the MoE does not have exact information the composition of the degrees awarded by universities (Informant A). If such behavior existed and if this behavior went undetected by the MoE, some of

50 A master’s degree from the professional upgrading program was usually 160 to 180 credit points.
the professional upgrading degrees might have been double-funded. If universities incorporated these degrees in their proposals with the full knowledge and understanding that this was prohibited, they would have been guilty of attempting a very blatant form of opportunism – pursuing greater revenue by means of lying. On the other hand, if universities were not aware that incorporating these degrees into their degree targets was prohibited, their level of culpability would be greatly lowered, if not totally dissipated. It is unclear whether this type of behavior had actually happened or whether it had been deliberate (Kivistö & Aarrevaara, 2005, p. 35n).

It has to be remembered that many non-opportunistic explanations for the low productivity can be put forward. Many of them can be found from the analysis of the output uncertainty which results from student behavior. Universities were not allowed to collect tuition fees and they did not have a legal means to force students to progress more rapidly through their studies, and therefore, they could not impose strong incentives for students to graduate. Contrary to expectations, many of the students were studying part time while simultaneously working full-time. In addition, the average age of professional upgrading students was higher than those in undergraduate programs and for some students, finding efficient way of progressing their way through their studies was difficult. Further, the professional upgrading students were subject to a different social and family situation. Many of them had families and therefore, finding time for studying was harder than it was for younger undergraduate students.

Other uncertainties were caused by the labor market situation. Especially in early years of the Program’s implementation, many professional upgrading programs found it hard to find competent teachers to teach courses. The salaries and other terms of employment could not compete with those offered by information industry companies, which were also suffering from a shortage of labor. Therefore, some professional upgrading programs were forced to use graduate students or even advanced undergraduate students as teachers and instructors. (Kivistö & Aarrevaara, 2005, p. 22.) Clearly, this was not a deliberate and opportunistic act of cross-subsidization, although the salaries paid to the graduate and undergraduate students were likely to be lower than those which would have been to professors or senior lecturers.
Besides these uncertainties, some universities were also suffering from a lack of facilities and equipment due to the speed and the size of enrollment increases. For instance, the Helsinki University of Technology complained that because of its central location in the region of Helsinki, the nation’s capital, the average costs of erecting new facilities were higher than in other regions in Finland. Therefore, from the perspective of the university, enrollment-based funding was not enough to cover the higher-than-average costs of establishing new facilities. Due the lack of facilities, Helsinki University of Technology reported that it had been forced to reduce laboratory teaching in some professional upgrading programs. (Kivistö & Aarrevaara, 2005, p. 23.) An interesting question is, therefore, how much genuine effort universities put in to anticipating these problems at the time they were negotiating the expansion in enrollments with the MoE? Presumably at least some the uncertainties described could have been foreseen.

The preliminary results of undergraduate education section of the Information Industry Program show higher productivity than in professional upgrading program thus making the occurrence of opportunism less likely. Although the total number of degrees awarded in 2003 and 2004 seems to be lower than the proportionate enrollment increases in 1998 and 1999, the preliminary results seem to be much better than the results in the professional upgrading programs. Also, the fact that nine universities enrolled 782 additional students at their own expense can also be interpreted as an effort to increase the number of degrees awarded. Of course, this argument cannot be made in support of those five universities whose total enrollment fell below the funded enrollment (see Table 13). However, the results of the evaluation organized by the FINHEEC in 1999 revealed that some undergraduate programs were constrained by problems that may have reduced the effectiveness of the programs. The faculty-student ratios indicated that the class sizes

---

51 Seven of the undergraduate programs at six universities participating in the Information Industry Program were evaluated during 1999. These universities and their programs were: University of Helsinki (Computer Science), Helsinki University of Technology (Computer Science and Engineering, Electrical and Communications Engineering), Lappeenranta University of Technology (Information Technology), University of Oulu (Information Engineering), Tampere University of Technology (Information Technology) and Åbo Akademi University (Computer Science). In addition to these, the evaluation also examined programs offered by polytechnics.
were big. The average of eight programs offered by seven universities was approximately 1:27 (range 1:13 to 1:43) (Hara et al., 2000, p. 26). As was suggested earlier, this type of ratio can indicate high efficiency as well as low effectiveness, depending on which interpretation is chosen. In this case, there is evidence of problems with effectiveness, since some of the faculty reportedly had suffered from burn-out due to the high teaching load:

[At] almost all places, the teaching staff complained about the workload. A couple of clear burn-out cases were reported in two places visited. (Hara et al., 2000, p. 26.).

As was the case with the professional upgrading programs, undergraduate programs were constrained by faculty shortages and teaching facilities. Due to the faculty shortage, graduate students and even undergraduate students were engaged to undertake teaching activities. Although it is true that graduate students can link research and teaching by delivering the latest research-based knowledge to students, their lack of experience may have a negative effect on the quality of the teaching. Unlike the situation with professional upgrading programs, there was no evidence of course minimum requirements being reduced. Nevertheless, the evaluation team was concerned about the mass lectures and missing student feedback information:

In several places, the Evaluation Team found attempts to mass produce the basic courses. This has led to the situation where everybody involved is unsatisfied. Students have no opportunity (or are afraid to do so) to ask for additional help and teachers feel they have a heavy work load running the course. (Hara et al., 2000, p. 28.)

The evaluators also suggested increasing the number of permanent faculty as soon as possible, despite the danger of increased expenditure:

Professors and teachers workload should be reduced considerably by recruiting additional staff with more long-term contracts. Additional salary incentives should be allowed to attract high quality staff to stay in teaching po-
sitions or attract new staff from the industry. Current short-term contracts together with the low salary level (if compared to industry) does not attract enough qualified staff. (Hara et al., 2000, p. 26.)

It is impossible to find out whether these effectiveness problems were caused partly by cross-subsidization, and whether this possible cross-subsidization was opportunistic in its nature. Nevertheless, since 1999, things have been moving in the right direction. The FINHEEC evaluation was followed by a small-scale survey conducted in 2003. According to the results of this survey, the problems associated with low faculty numbers and non-existent facilities were reported to have decreased. In the case of the former problem, the recruiting of qualified faculty had become easier because of the changes in information industry labor markets; the demand for labor has declined after the sharp increase of the late 1990s (Hautala, 2004, p. 6). This could indicate that the main parts of the described problems were more likely to have been caused by output uncertainties, over which universities had only limited control.

The graduate school assessment results showed a slight improvement in the overall results of the twelve sample graduate schools. As was concluded earlier, upholding and gaining prestige is believed to be the most dominant and important goal among individual faculty members and universities, and having or building strong graduate programs is generally related to a desire for increased prestige. Assessment results also showed a slightly negative development in a number of points of assessment. These ‘negative developments’ were noted in the quality of graduate schools and the research training they offered, the professionalization of researchers’ careers, the efficiency of graduate training, and in the aim of lowering the age at which graduates submit their dissertation. However, on the basis of the overall positive assessment results, there is no reason to suspect that universities had opportunistically pursued prestige in order to get more graduate student places.

The agency costs of the Information Industry Program are impossible to calculate. However, it can be estimated that they were relatively low, especially when they are compared to the total worth of the implemented Program. The governance of professional upgrading programs and undergraduate programs was integrated into the already existing standard performance agreement process between the MoE and universities to a large extent. For this reason both the additional report-
ing, planning and expanded employment within the MoE were low. Reporting requests were relatively small-scale and only one new position, a project manager, was established in order to meet the needs of governing the Program’s implementation (Kivistö & Aarrevaara, 2005, p. 14). The same conclusions can also be drawn about graduate schools within which governance costs were also likely to be quite low. This is because the governance of graduate training was also integrated into the existing standard funding and assessment process of MoE’s graduate school system.

Due to the absence of solid proof of opportunistic behavior, very little can be said about the monetary cost of possible university opportunism. The available data did not allow any wide-ranging analysis to the overall successfulness of the Program to be made, although it was possible to draw some tentative conclusions on the basis of financial and performance data. Nevertheless, on the basis of the available data, it can be stated that the results of both undergraduate programs and graduate schools seemed to show more positive than negative developments thus making opportunistic behavior by universities less likely. Although the current results of the professional upgrading programs were not as good as had been expected, it is impossible to say whether this was caused to some extent by shirking, opportunistic pursuit of revenue and prestige, or opportunistic cross-subsidization. If the appearance of opportunistic behavior by universities was low in reality, the estimated agency costs of implementing the Program can also be considered to have been relatively low. If this is the case, the MoE’s choice not to establish expensive or heavy governance procedures was correct and it increased the overall successfulness of the Program implementation. On the other hand, if extensive opportunistic behavior on the part of the universities existed, the total agency costs of Program implementation could have been considerably higher.

4.5 Discussion on the empirical insights offered by the theory

Although the empirical data on the selected case did not enable a full utilization of the multiplicity of the theoretical aspects discussed in Chapter 3, agency theory seems to offer an appropriate framework for examining government-university relationships in an empirical con-
text. On the basis of logical analogy, theoretical concepts like principal and agent, agency relationship, tasks, agency problems and their governance, agency variables and agency costs can also be operationalized in the empirical context of the government-university relationship.

As a theoretical framework for mapping empirical reality, agency theory is nevertheless capable of focusing attention on issues which other theoretical models or public policy analysis frameworks do not seem pay sufficient attention. One such issue is the various forms of opportunistic behavior which can take place at the university level, particularly forms of adverse selection and moral hazard opportunism. With the exception of the few models which explain the economic behavior of universities, describing and identifying different forms of possible opportunistic behavior of universities is rarely seen as an issue in any other theory used in higher education research.

The second unique perspective that agency theory is able to provide is related to the effects university opportunism had on productivity. If university opportunism is accepted as one possible explanatory factor leading to poor performance or low productivity, the need to examine issues such as performance measurement, funding models, and quality assessment suddenly becomes more important. On the other hand, as it was possible to observe on the basis of this case study, it was not possible to fully prove the existence of university opportunism. It is very difficult to make any inclusive definitions that would cover and identify all forms of opportunistic behavior inside universities. Due to the invisible and difficult to perceive nature of this behavior, the cost effects of opportunistic behavior are both hard to conceptualize theoretically and difficult to prove empirically. For this reason, it is also impossible to tell whether additional sources of evidence, like more detailed intra-university data and more perfect performance information about the results of the Information Industry Program, could have possibly offered more solid evidence of either opportunistic or non-opportunistic behavior in certain universities in this particular case.

On the basis of the empirical case examined, it would seem that the perspectives that agency theory could contribute to the empirical examination of government-university relationships are related mainly to the analysis and selection of governance mechanisms related to adverse selection and moral hazard problems. By offering a coherent framework,
agency theory can combine the description and analysis of opportunistic behavior with the mechanisms by which it can be governed. In addition, through the utilization of agency variables and agency costs, the government’s choice between various governance and funding mechanisms can be analyzed case-specifically. Together with agency costs, agency variables provide an ex-post tool to analyze the strengths and weaknesses of the government’s governance choices. But what is more important is that agency variables and agency costs are able to provide ex-ante information for the government to use in helping it in selecting and predicting appropriate governance mechanisms in a particular governance situation. Although the ex-ante or ex-post information that agency variables and agency costs offer is probably insufficient for covering all the relevant aspects that are related to government’s governance choices, it still can offer important and theoretically grounded insights that other theoretical and pragmatic approaches lack. However, just as there are difficulties in proving the existence of opportunistic behavior, calculating agency costs can also be very difficult if the government’s cost calculation systems cannot offer the data needed for calculating agency costs. Nevertheless, making indirect estimates, as was done in the empirical case examined, is still usually possible.
5 AGENCY THEORY AS A FRAMEWORK FOR ANALYZING GOVERNMENT-UNIVERSITY RELATIONSHIPS: STRENGTHS AND WEAKNESSES OF THE THEORY

5.1 On theories and their evaluation

Before analyzing the strengths and weaknesses of agency theory in the context of examining government-university relationships, it is reasonable to discuss first what ‘theory’ is in general and what characteristics are usually associated with ‘good theories’.

What is theory? As Harmon and Mayer (1986, p. 57) have put it, for some people, the term theory “means jargon and complex words to describe what appear to be otherwise relative simple happenings”. At a loose and almost casual level, the concept or term theory is simply understood to be a personal opinion, a hypothetical assumption, an orientation, a framework, a technique, or an approach. Often the concept of theory is not used in the relaxed sections of the social sciences, but as a meaning of ordering factual material (history, events, cases, stories, measures of opinion, observation) so as to present evidence through definitions, concepts, and metaphors that promote understanding (Fredrickson & Smith, 2003, p. 7). However, there are no concise, unanimously accepted definitions within various fields about what exactly constitutes a theory (e.g. Doty & Glick, 1994, p. 233; Sutton & Straw, 1995, p. 371; Amundson, 1998, p. 342). There is a lack of agreement on issues, for instance, as to whether a model and a theory can be distinguished apart, or whether a typology can be regarded as a theory (Sutton & Straw, 1995, p. 371). In fact, the term theory is even believed by some to have become meaningless because of its plurality of definitions:

Like so many words that are bandied about, the word theory threatens to become meaningless. Because its referents are so diverse – including everything from minor working hypotheses, through comprehensive but vague and unordered speculations, to axiomatic systems of thought – use of the word often

Indeed, a wide gap seems to exist between the different scholarly opinions regarding the definition of what constitutes a theory. Most rigorous definitions of theory have come from the representatives of positivist research tradition and from the natural sciences. According to their opinion, “[a] theory is a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining and predicting the phenomena” (Kerlinger & Lee, 2000, p. 11, italics in original).

Other types of definition do not reject the explanatory and predictive capabilities of theories, but they are able to understand theory more broadly and express its intention in a more diffuse manner.

Theory is an organized, coherent, and systematic articulation of a set of statements related to significant questions in a discipline that are communicated in a meaningful whole. It is a symbolic depiction of aspects of reality that are discovered or invented for describing, explaining, predicting, or prescribing responses, events, situations, conditions, or relationships. Theories have concepts that are related to the discipline’s phenomenon. These concepts relate to each other to form theoretical statements. (Meleis, 1998, p. 12.)

But looser definitions can also be found. For instance, Harmon and Mayer have understood theory as “any intellectual construct that enables someone to make sense of a situation or a problem” (Harmon & Mayer, 1986, p. 61). This definition lacks the explicit requirement that a theory should possess explanatory and predictive capabilities. And then, views exist that understand theory as ‘enlightenment’. Understanding theory as enlightenment does not aim to produce generalizations, but intends to lead to a “set of categories and domain assumptions aimed at clearing away conventional notions to make room for artful and exciting insights” (DiMaggio, 1995, p. 391).

The question of what constitutes a good theory is not in any way simpler. For instance, there is lack of agreement as to whether the strength or goodness of a theory depends more on how ‘plausible’ ‘interesting’
or ‘aesthetically pleasing’ the theory is (e.g. Weick, 1989, p. 517), or how well it offers ‘explanations’ and ‘predictions’ in order to diminish the complexity of the empirical world (e.g. Bacharach, 1989, pp. 512-513). Nevertheless, despite the differences, many scholars have agreed that all or at least some of the following criteria can be related to good and ‘strong’ theories.

First, a good theory should be simple in a way that cannot fit all observations of the phenomena. One should be able to find occurrences that contradict it. When both a simple and a complex theory exist and both account for the facts equally well, the simple explanation should be preferred (i.e. ‘Occam’s Razor’) (Kerlinger & Lee, 2000, p. 13). While theory attempts to map or mirror reality, complexity may be lost in the trade-off by simplifying in order to achieve clarity and understanding (Key, 1999, p. 317).

Second, a good theory is also general. General theories that apply to many phenomena are considered to be more useful than narrow theories that focus on only a few types of phenomena. The more general a theory, the more useful it can be considered (Hardy, 1992, p. 381; Kerlinger & Lee, 2000, p. 13). On the other hand, greater generality is often purchased at the price of greater precision and specificity. The problem is that big theories and grand overarching theories are usually made so general by simplifications and assumptions as to render them unable to explain anything but the most obvious occurrences (Fredrickson & Smith, 2003, p. 6).

Third, a good theory should be useful. The definition of the usefulness (or utility) may vary depending on the nature and type of a theory. In the strictest sense, the usefulness of theories is tied to their ability to explain and predict, i.e. their explanatory potential and predictive adequacy (e.g. Bacharach, 1989, p. 501; p. 507; Key, 1999, p. 317). In addition to usefulness, the general criteria for the evaluation of theories may also include the requirement of falsifiability. Falsifiability determines whether a theory is constructed such that empirical refutation is possible (Bacharach, 1989, p. 501; see Popper, 1959; Hempel, 1965). According to a looser definition, a theory is useful if it somehow contributes to understanding. If the theory is able to describe the phenomenon, and simultaneously suggest new ideas and a new way looking at the phenomenon under study, theory contributes understanding (Hardy, 1992,
Indeed, good (practical) theory is one that either illuminates options for action that would not otherwise be apparent or stimulates greater understanding, evokes new and unexpected insights that are different from those revealed by common sense or illuminated by other ways of looking at the situation (cf. Harmon & Mayer, 1986, p. 61; Kezar, 2006, p. 331).

Fourth, a good theory should also be plausible. According to Weick (1989, p. 517), a theory is judged to be more plausible and of higher quality if it is interesting rather than obvious, irrelevant or absurd, obvious in novel ways, a source of unexpected connections, high in narrative rationality, aesthetically pleasing, or correspondent with presumed realities.

As was observed in section 2.5, there seems to be great disagreement between the proponents and critics of agency theory concerning the theoretical and empirical value of the theory. Proponents of agency theory would be likely to suggest that agency theory is simple, general, useful and plausible, whereas the critics of the theory would oppose some or all of these characterizations. This is understandable, since whether we like it or not, scholarly preferences and perspectives, as well as the significance and emphasis put on each of the presented evaluation criteria, seem to vary between theories, theorists, paradigms and disciplines. Nevertheless, a relatively neutral position would be to argue that a good theory is a theory that fulfils the purpose for it was proposed or invented. As the purpose of theories varies, so the mode of validating the theory will vary also (Dickoff & James, 1992, p. 100; Kezar, 2006, pp. 332-333). In this study, this perspective of evaluating the strengths and weaknesses of the theory will be adopted. The purpose of agency theory is seen in the light of the defined research objective and research questions. Therefore, its strengths and weaknesses should be evaluated on the basis of the theoretical and empirical insights it was able to provide in the examination of the government-university relationship. The analysis is also parallel to many of the issues that were discussed earlier in the context of general contributions and criticism of agency theory.
5.2 The strengths of agency theory

One of the greatest overall strengths of agency theory seems to be that it offers insights that focus on the economic behavior of universities. In general, there has been little attempt to apply economic models and theories to reflect the organizational behavior of universities. Research which has featured organizational aspects of universities has been developed mainly by sociologists, political scientists, organizational theorists and public administration experts. Their main focus has been on issues like decision-making rules and procedures, organizational structures and cultures (cf. Garvin, 1980, p. 4). While the non-economic approaches such as sociology, organization theory, public administration, and political science, have provided undeniably valuable insights and conceptualizations, they have completely failed to pay adequate attention to the shaping of university behavior due to the effects of the economic environment. Unlike most of the social, cultural and structural approaches to the university organization, economic approaches, like agency theory, are able to draw particular attention to the motivations and interests of individual members of the university organization. Economic approaches remind non-economists that the material underpinnings of organizations and the self-interest of organizational participants drive much of the behavior and strategic choices inside the organizations (Freeman, 1999, p. 174). A failure to examine this specific area would mean that the objective of providing a holistic picture of the operation of university organization would not be met.

The insights related to adverse selection and moral hazard problems can be considered to be especially valuable. Despite the fierce criticism about some of the assumptions of self-interest and opportunistic behavior, one should be able to admit that the empirical reality of every-day life situations seems to verify rather than disprove the existence of these in human life. Indeed, without accepting the assumptions of self-interest and opportunism, it would be very difficult to explain why e.g. health certificates are required from job applicants, why clock cards are punched in factories, or why items such as driver’s licenses or passports are required. Even in the lives of many families, which actually should be the greatest examples non-economic co-operation based on mutual trust and sharing, different forms of opportunism and economic incen-
tive seem play a role. For instance, the amount of children’s weekly allowance is often tied to the accomplishment of housework efforts, like babysitting, taking out the garbage, or taking the dog for a walk. From the perspective of agency theory, these arrangements can actually be categorized as outcome-based contracts, which parents utilize in order to provide sufficient monetary incentive to overcome their children’s temptation to shirk from their family responsibilities.

The legitimacy of the opportunism assumption can hardly be questioned in government-university relationships. Indeed, the problems of adverse selection and moral hazard may partly explain the constant increases in the cost of higher education. They may also explain why governments are so willing to invest time, effort and monetary resources in the governing and monitoring of universities. Although there are other possible explanations, the primary explanation for government policies to introduce new funding models, demand performance reports, adopt performance-measurement schemes, and arrange quality assurance procedures, are likely to prevent opportunistic behavior by universities. Therefore, enabling identification, description, conceptualization, and analysis of different forms of university opportunism, can be clearly considered as one of the most important strengths of agency theory.

By offering a framework for examining university opportunism, agency theory offers a framework which helps to open the ‘black box’ between a university’s inputs and outputs. From the theoretical perspective, the concept of opportunism has been rather underdeveloped. Also, from an empirical perspective, there have been too few studies which have examined university opportunism and its effects systematically. Given the hidden and unpleasant nature of opportunism, various methodological, technical, and research ethical difficulties are likely to surround the empirical examination of the phenomenon. However, as long as these problems remain unchallenged by serious research efforts, it is impossible to say to what extent the empirical examination could actually take place.

Insights that are related to the productivity effects of university opportunism can be considered to be strengths of agency theory, as well. Therefore, by explicitly accepting university opportunism as a possible explanation for sub-standard performance and low productivity, the perspective of examining a wide variety of other theoretical and em-
empirical issues related to more traditional topics of higher education re-
search becomes wider. In general, the insights from the adverse selec-
tion problem are able to support the description and analysis of various
contractual and exchange-based situations which have become much
more common in modern government-university relationships. More
specifically, agency theory is able to provide suggestions on the success
in overcoming pre-contractual informational asymmetries by identify-
ing and analyzing the screening and signaling activity and the agency
costs these incur. In this way, agency theory is able to set some general
standards on the selection of the most productive universities among
the pool of universities bidding.

Insights that are related to governing different forms of moral haz-
ard opportunism in government-university relationships can also be
considered to be a strength of the theory. Agency theory is able to offer
theoretical and empirical insights by categorizing the alternative gov-
ernance mechanisms to behavior-based and output-based governance
options. In mainstream higher education research, the same area of
theoretical and empirical interest is covered by approaches discuss-
ing funding mechanisms and performance measurement (e.g. Cave et
al., 1997; Jongbloed & Vossensteyn, 2001; Burke et al., 2002), studies
of policy instruments (e.g. van Vught, 1997; Kogan, 1998) and imple-
mentation theory / approach (e.g. Cerych & Sabatier, 1986; Gornitzka
et al., 2002). These and other more practical approaches, (such as pro-
gram evaluation), are valuable for categorization and problematization
of government governance of higher education. However, they usually
lack a broader theoretical structure which would unite the relationships
between theoretical concepts and observed empirical phenomena in a
coherent, structured and logical manner. For the sake of greater clarity
and understanding, it would be important to ensure that e.g. perfor-
mance indicators and other government instruments intended to verify
university accountability are both valid, and theoretically and empiri-
cally sound, and that they have been developed within a conceptual
framework coherent with the ideas and purposes for which they will
be used (cf. Cave et al., 1997, p. 213). On the basis of the theoretical
and empirical examination in this study, one can conclude that agency
theory can offer all these things, within those limitations which will be
discussed later.
As the examination of the empirical case showed, agency theory can help governments to devise and assess the most appropriate methods of organizing funding, performance measurement, and governance as a whole. In general, the increase in a government’s use of contractual mechanisms as a disciplining method is making contractual perspectives offered by agency theory even more ubiquitous and relevant than before.

In fact, questions of accountability are at the heart of today’s governments’ major dilemmas. All over the world, governments want to ensure that their own goals will be pursued efficiently and effectively with the funds provided. On the other hand, governments rarely have the appropriate knowledge, time or the inclination to appreciate the complexities or the peculiar values of university organization. Any attempt to mandate how funds should be utilized could be counter-productive (Harrold, 1992, p. 1468). In this sense, the insights that agency theory offers from informational asymmetries, goal conflicts, and the selection of the governance methods, could offer practical help for dilemmas in the designing of efficient and effective governance procedures.

It is also worth noting that agency theory is not only a tool able to strengthen the governing capabilities of the government. It may also help the faculty, departments and universities to understand and develop those means, which can demonstrate that they have accomplished (or at least have attempted to accomplish) their tax-funded tasks. One of the key issues seems to be how to meet the legitimate accountability needs of government while safeguarding the institutional autonomy of universities and the academic freedom of the faculty (cf. Kells, 1994, p. 175). According to Hüfner (1991, p. 57):

> The institutions of higher education are challenged to use their intellectual potential in their own interest because if they do not start to elaborate a still-needed, comprehensive list of clearly defined, practical, and commonly accepted performance indicators, and if they do not contribute to the improvement of the quality of measurement, ‘external’ accountability will take place at a much lower level of mutual understanding.

In fact, rather than weakening the role of the academic community, agency theory can in fact strengthen the role of universities and faculty,
if they choose to take into their own hands initiatives which demonstrate their accountability. In addition, agency theory and agency variables can offer a theoretically sound framework for analyzing the actual and potential shortcomings of funding schemes and various performance indicators and therefore increase the weight of the argumentation directed against their use. Indeed, too often people who strongly oppose any type of performance measurement of universities seem to lapse into emotionally-loaded, verbose, populist, and commonplace resistance instead of showing analytical and constructive arguments for their opposition. And last but not least, the behavioral assumptions of agency theory can clearly offer an invigorating alternative for the self-evaluation of the academic community. It is somewhat surprising how uncritical and defensive the academic personnel can be when it comes to the examination of their own work and behavior. Arguably they should be familiar with the concepts of objectivity, rationality, and skepticism.\textsuperscript{52}

5.3 The weaknesses of agency theory

Central aspects for evaluating the weaknesses of agency theory seem to touch the question of the consistency of the theory’s basic assumptions. As was concluded in section 2.5, agency theory has been criticized mostly because of the behavioral assumptions it makes concerning human motivation and behavior. The critics of agency theory argue that the theory presents too narrow a model of human motivation and that it makes unnecessary negative and cynical moral evaluations about people. According to critics, focusing on self-interested and opportunistic behavior makes it possible to ignore a wider range of human motives, including altruism, trust, respect and intrinsic motivation of an inherently satisfying task.

This criticism has validity also when agency theory is utilized for analyzing government-university relationships. If universities are considered only as aggregates of self-interested and opportunistic pursuers of revenue and prestige, a high level of realism, objectivity and tactful-

\textsuperscript{52} At least the author of this study has to confess that different forms of individual level moral hazard opportunism (e.g. leisure shirking) have more than just tempted him during the different stages of research process.
ness will undoubtedly be lost. Although there are countless examples of selfish opportunism in the range of social and economic relationships between human beings, countless examples of altruistic, other-regarding behavior can be found with the same certainty. Faculty motivation can also include factors like the intrinsic psychological satisfaction gained from teaching students and serving as mentors to others, and receiving public recognition from colleagues (Gomez-Mejia & Balkin, 1992, p. 949). A further problem of one-sidedly negative evaluation of the true motives of university personnel is that it can cause the most severe damage to those faculty members and administrators who are honest and hard working and whose professional pride and sense of duty is high. Without a doubt, any unwarranted suspicion or allegations of guilt for something which is totally opposite what you are and do is probably among the most flagrant injustices that one could face.

Even though agency theory does not suggest that self-interest and opportunism are the only motivators of human beings, part of the problem is that the theory fails to explain the principal’s utility losses by any other factor than agent opportunism. With the exception of the agency variable of output uncertainty, agency theory does not even attempt to provide any analytical apparatus by which the principal could distinguish an agent’s non-opportunistic performance failures from the opportunistic ones. This problem is especially severe in government-university relationships. Given the ulterior nature of university opportunism, it can possibly be detected mainly from the low performance level of universities. However, as was observed in the examination of the empirical case of this study, there are plenty of reasons for lower productivity other than opportunism, such as uncontrollable uncertainties, genuine obliviousness, or some other unexpected but legitimate reason for a university to lack productive capacity. On the other hand, unlike with opportunism, universities have no incentive to hide the non-opportunistic reasons for poor performance.

In addition to behavioral assumptions being able to provide unique insights, they can also limit the scope of the theory. It is mainly because of the behavioral assumptions that agency theory pays attention only to formal and economic aspects of government-university relationships. This makes the focus of agency theory rather narrow. Despite the fact that economic arguments and theories have been underrepresented
in the mainstream higher education research and literature and the undoubtedly economic nature of university organizations, agency theory is not able to capture the wide variety of the plurality of non-economic aspects that can be related to government-university relationships. Agency theory also neglects forms of interaction other than through formal economic incentives and sanctions. But in complex higher education settings, not just economic, but also political, social, psychological and cultural values shape the outcomes (Schmidtlein, 1999, p. 169). In addition to their economic character, universities are also social organizations as regards the norms, incentives and organizational structure on which their behavior is based. For instance, in addition to the fact that contracts can be used as a means of control in government-university relationships, they can also play a strong role in consensus building and as an arena for dialogue between the universities and the government (Gornitzka et al., 2004, p. 96). Depending on the different importance given to the social and economic aspects of the university organization, the behavior of the universities can be analyzed from very different perspectives, where the economic perspective is only one possibility (Geuna, 1999, p. 14). Agency theory clearly has something to say about the construction of funding formulae, but it can say very little about the possible effects of the use of these formulae on the socio-cultural aspects of the informal organization of universities.

Examination of the empirical case study seems to verify these observations. For example, in order for the Ministry to make its decisions about the allocation of enrollment places to universities for the professional upgrading and undergraduate programs, it gave a much higher priority to getting the implementation process started than it did to setting up systematic screening and signaling efforts. Similarly, the allocation of graduate school posts was also affected by non-economic and non-productivity related factors, like national science policy and regional policies. Although political questions could also be analyzed by utilizing economic analysis (as is done in e.g. the public choice approach) the perspective could not do justice to the analysis of politico-administrative decision-making dynamics in its entirety. Also, by focusing only on formal and control-driven aspects of the government-university relationship, agency theory ignored other informal, trust-based factors that took place during the Program implementation. For instance, the
framework of the theory could not meaningfully incorporate the dialogue process between the Ministry of Education and universities. The performance agreement process included preparatory seminars and other joint events for the universities and the Ministry of Education before they embarked on the actual performance negotiations. The aim of these events was to increase interaction between different levels and to promote commitment to meeting the targets (cf. Ministry of Education, 2004a, p. 9).

The stated problem that agency theory examines agency relationships without questioning the legitimacy or sensibility of the principal's goals can also be considered as a limitation of the theory. Sometimes the principal's goals and tasks submitted to agents can be unclear, pernicious or even contradictory. In the free market environment, the framework of agency theory is more understandable because of the free exit option the agents have. Because of the freedom of entry and exit to contracts, those agents that can accept the terms of a principal's contract are assumed to be willing to engage in agency relationships. On the other hand, those agents who do not agree with the terms of a contract are not assumed to be engaged in an agency relationship in the first place. The situation is usually somewhat different in non-profit and especially in public sector settings. The relationships between a government and public universities are problematic in this sense, since the universities' exit option is more limited or even denied by legislation. However, there are exceptions: in the empirical case, universities also had the option of not participating in the Information Industry Program. Nevertheless, one could ask justly the following questions: Should universities accept all the goals of the government as such without questioning their effects on freedom of speech, academic freedom or other aspects of institutional autonomy? Or, what if universities understand better than the government which higher education goals the government should be promoting?

Agency theory also seems to suffer from other aspects of its narrowness of focus. The problems of mirroring or describing complexity and diversity of the empirical reality also crystallize in the fact that agency theory seemingly ignores (or at least is not able to allow for the existence and influence of) third parties, stakeholders or other competing principals outside the examined agency relationship in its framework.
These weaknesses are also worth noting in the theoretical and empirical examination of the government-university relationships. As was concluded, the existence of multiple principals and other third parties with conflicting goals is problematic for agency theory, because it examines only one of the many agency relationships at a time.

The empirical reality corresponds with this view of multiple principals and stakeholders, and this is especially evident in the field of higher education. A growing number of stakeholders can be found inside and outside the university. The government is just one of the many principals/stakeholders all of whom have a claim on the role and direction of the development of modern day higher education (Maassen, 2000, p. 379). Students, private donors, other public and private research financiers, professional associations and trade unions are all examples of alternative stakeholders, and even competing principals. Current ‘stakeholder society’ makes the real world of higher education more complex than the examination of the bilateral government-university relationship can imply. Even though the pivotal role of the national or regional government as a primary principal is evident in many higher education systems, the governments appear to be providing a diminishing share of the basic funding for universities and therefore the accountability requirements have extended in many directions (Clark, 1998, p. 130). The paradox to be faced in this kind of environment is that the existence of numerous resource providers may in fact lead universities into a situation, where the task fulfillment of other principal may lead to opportunistic behavior against the other principals respectively. In the worst case scenario, the government itself may indirectly and unconsciously lead universities to opportunistic behavior by encouraging them to seek non-incentive compatible extra funding from different markets. (Gornitzka et al., 2004, p. 98.)

The empirical case used in this study gives mixed support for these arguments. The Information Industry Program induced exceptionally wide co-operation between the MoE, the universities and the information industry companies. The majority of universities participating in the implementation of the Program did have co-operative arrangements with information industry companies. As an individual event, however, the most significant co-operative project was the donation project ‘Joint venture’ where twenty-three information industry compa-
nies made donations to the value of 5.9 million euros to three universities (the Helsinki University of Technology, the Tampere University of Technology, and the University of Oulu) (Kivistö & Aarrevaara, 2005, pp. 31-32). Although conflicting incentives were not reported to have occurred because of this co-operation, this example at least still verifies on its own behalf the existence of a stakeholder society in which modern governments and universities operate. However, the significance of this weakness would seem to be context-bound. For instance in the Finnish higher education system, the national government still has a relatively dominant role in governing the universities than, say, the state governments have in governing the state universities in the United States. Therefore, the weakness mentioned is stronger in those contexts where the influence of the government is limited and the number and influence of other competing principals and stakeholders is greater.

5.4 Discussion of the strengths and weaknesses of the theory

It seems that the greatest part of the conflicting interpretations about the theory’s strengths and weaknesses can be related to the behavioral assumptions of the theory. Indeed, the strong assumptions of self-interest and opportunism seem to constitute the crystallization nucleus between the strengths and weaknesses of agency theory. Since it is likely that academic and administrative workers are neither more nor less honest than the representatives of any other profession, which perspective of the agency theory’s behavioral assumptions should be emphasized in the analyses of government-university relationships?

The answer to this question basically determines many of the potential strengths and weaknesses of the theory. Those who are more likely to believe that individuals and universities will behave opportunistically, are more likely to consider agency theory to contain more strengths than weaknesses. Similarly those who do not consider opportunism to

---

53 In the United States state universities are often surrounded by different actors equal to competing principals. According to Lane (2005, p. 16), “[d]epending upon the state, multiple actors such as the legislature, the governor, higher education commissioner, and coordinating board all could compete for some controlling stake in the decision-making processes of public colleges and universities”.

be a noteworthy problem are more likely see weaknesses than strengths in the theory. People supporting the former option are likely to be more concerned about the possibility that individuals and universities behaving opportunistically exploit those who are more principled. People supporting the latter option are probably more concerned about the possibility of the blame which the negative behavioral assumptions may bring, and the dysfunctional effects that stronger government control might create.

Without a doubt, agency theory would lose a great part of its identity, its subtlety, a certain amount of its realism, and its contextual richness, if its behavioral assumptions were to be relaxed or modified. In fact, the theory gains part of its attraction and power through the simplistic theoretical eloquence that makes it possible to delve beneath the surface to the underlying and hidden interests of human beings (cf. Whicker, 1997, p. 21). Different forms of individual and institutional opportunism, their economic effects, and the government options for governing them, draw their descriptive and prescriptive power mainly from the behavioral assumptions of the theory. Further, if agency theory is considered to be cynical in its behavioral assumptions (rightly or wrongly), many other theories of social sciences and higher education could then be said to be too naïve in their overly positive assumptions of concerning human nature and behavior as well. It is legitimate to say that agency theory is likely to capture at least something essential about several situations of interest without ever accepting all the assumptions about human nature under which the analysis is usually carried out (Petersen, 1993, pp. 279-280). Although organizations like universities are not simply a means of distributing benefits to self-interested individuals, they can serve this function in addition to other functions (Worsham et al., 1997, p. 426).

On the other hand, the assumption of agency theory also creates some serious problems. Basic assumptions of agency theory are simplifications from much broader and complex behavioral motives of human beings. In addition to self-interest and economic utility, there are various cultural, social and psychological variables which affect government-university relationships, and which agency theory is not able to capture. Since it is probably true that theories tend to shape our world views and direct our actions, too strong a reliance on agency theory could lead to wrong conclusions being made about the capacity of the theory
to describe and prescribe government-university relationships, and to prevent the search for alternative views and explanations. Because of their strong assumptions, economic theories such as agency theory can become self-fulfilling when, regardless of their empirically tested initial ability to predict and explain behavior, they become accepted truths and norms that govern the beliefs of how people behave or should behave in organizations (Ferraro, Pfeffer and Sutton, 2005, p. 9).

In the end, all theories, models and frameworks are more or less simplified conceptual representations of the real world. In fact, it is quite absurd to expect that a theory or model could be totally realistic in the sense that it would be able to cover all the aspects of empirical reality. While a theory attempts to map or mirror reality, complexities may be lost in the trade-off of simplifying in order to achieve clarity and understanding. From the perspective of economics, a good theory is especially able to simplify, sometimes a lot, in order to help us to think more clearly (Key, 1999, p. 317). Other representatives from the social sciences do not necessarily agree with this view. However, the majority of scholars would probably agree that a theory should not distort the reality “too much” (Begg, Fischer & Dornbush, 1994, p. 28). ‘Too much’ is, of course, a relative expression open to a range of interpretations. Therefore, the question about what is ‘too simple’ will remain a matter of conflicting interpretations.
6 CONCLUSIONS

6.1 Insights, strengths and weaknesses of agency theory

The research objective of this study has been to use agency theory as a framework for the examination of government-university relationships. Within the limits of this objective, two research questions have guided the analyses conducted for the study. The first research question provided a focus for examining the insights agency theory can offer when it is utilized as an analytical framework for examining the theoretical and empirical dimensions of the government-university relationship. The second research question directed the study towards an evaluation of the strengths and weaknesses of agency theory in this context. With regard to these research questions, the following conclusions can now be drawn.

The framework of agency theory is relatively simple. This simplicity, along with the universal nature of agency relationships, has made agency theory generic enough to allow the application of the theory outside economics, the discipline in which it was originally developed. Attempts to apply agency theory as a heuristic or illustrative framework for theoretical and empirical studies in disciplines outside economics have been growing in number. Although agency theory has also been introduced in the field of higher education, the determining the theory’s potential for exploring the theoretical and empirical dimensions of government-university relationships was not sufficient to form a comprehensive picture of the potential and dynamics of the theory. This study has attempted to overcome this deficiency in its theoretical and empirical analysis.

In general, government-university relationships seem to contain both of the essential conditions that should be present in an agency relationship: informational asymmetries and goal conflicts. Both of these conditions can be operationalized in the theoretical and empirical contexts of government-university relationships, and on the basis of the theoretical and empirical analysis conducted, they seem to be relevant to an examination of this relationship.

From the theoretical perspective, the highly specialized nature of academic work and the complexities in the organizational structure
and production technology of universities are likely to create favorable conditions for high informational asymmetries. As a theoretical concept, informational asymmetries increase the understanding of many of the issues that are related to external observation and low transparency of universities’ economic and operative behavior. Most of all, it highlights and helps to systematize the different elements that could overcome or create obstacles to the government’s monitoring activities. Also, it is reasonable to assume that goal conflicts exist between universities’ official and operative goals and the accountability demands of the government. The concept of goal conflict generates insights for analyzing the goal structure of universities from the perspective of government expectations. It also allows for the construction of estimates of the likelihood of goal conflict, such as the level of government resources available and the specificity of the government’s goals being imposed to the universities. The goal conflict assumption also assists in discerning the relationships and tensions between the government and the universities’ goals in a more logical and structured manner. It guides the focus towards issues that are neglected by many other theories or approaches.

The analysis of the empirical case study appears to provide support for the theoretical insights. The analysis showed that the Ministry of Education was constrained by informational asymmetries during the implementation phase of the Information Industry Program. Evidence of informational asymmetries resulting from academic work, spatial differentiation and complexities in the production technology of universities was found. However, empirical findings concerning goal conflicts were less evident. Due to the invisible nature of motivations and operative goals, the overall status of goal conflict was difficult to discover empirically. Nevertheless, the analysis conducted allowed for it to be deduced that there were reasons to accept the existence of goal conflicts on the basis of the scarcity of available resources.

The existence of both informational asymmetries and goal conflicts creates favorable conditions for the appearance of agency problems. From the theoretical perspective, the adverse selection problem seems to allow theorizing about the pre-contractual problems that a government faces when it has to choose a university from the pool of those bidding. Adverse selection problem underlines the possibility for opportunistic behavior by universities occurring as an issue that the gov-
ernment should take into consideration before the establishment of an actual agency relationship. In addition to addressing these problems, agency theory offers methods for both government and universities to attempt to overcome the adverse selection problem. It can be assumed that these methods, known as screening and signaling mechanisms, are able to decrease informational asymmetries regarding the willingness and capability aspects of universities’ production behavior. From the empirical perspective, the existence and the importance of the adverse selection problem was verified particularly in the selection process for graduate schools. On the other hand, the selection process for professional upgrading and undergraduate programs showed that other, non-productivity related aspects had more influence on the selection outcome than the adverse selection problem would imply.

The other agency problem, the problem of moral hazard, is able to offer a rich variety of insights on issues that are related to established agency relationships. The moral hazard problem allows the conceptualizing and operationalizing of possible forms of university opportunism, such as shirking, opportunistic pursuit of revenue and prestige, cross-subsidizing, and the distortion of monitoring information. In addition, the moral hazard problem can also cause attention to be focused on the productivity effects of opportunistic behavior by offering alternative explanations for lower levels of performance by universities. By accepting opportunism as one possible explanation for lower productivity, the theoretical perspective for examining issues like accountability, efficiency, effectiveness, performance measurement, funding models, or quality assessment can become wider. However, as further demonstrated by the case study, the existence of opportunistic behavior is very difficult to prove empirically.

In addition to analyzing moral hazard opportunism by universities, agency theory offers two types of contracting options – behavior-based and outcome-based contracts. Both the theoretical and empirical analyses of this study found that it was possible to operationalize these methods in the context of government-university relationships. This operationalization allowed categorizing funding methods, performance measurement instruments, and other monitoring and assessment practices to be divided into two mutually exclusive categories, which were referred to in this study as behavior-based and output-based governance proce-
dures. The special importance with this categorization is that it is able to create conceptual links between different governance procedures and the conditions that cause agency problems – that is informational asymmetries and goal conflicts. These insights allow more systematic and theoretical analysis of the effects of particular governance methods.

As an important part of discerning the governance of agency problems, especially the moral hazard problem, agency theory introduces the concepts of agency cost and agency variables. Agency variables can offer insights for analyzing the context and conditions connected to the government-university relationship; output measurability, output uncertainty, task programmability, goal conflicts, and length of agency relationship. Agency costs, on the other hand, offer a way to determine the total sum of the costs resulting from agency relationships, that is, costs of governing universities plus the costs incurred because of the opportunistic behavior of universities. Governance costs include the direct costs of governance procedures, but the indirect costs that are incurred due to the dysfunctional effects of the governance procedures should also be included. The costs of opportunism are the costs resulting from opportunistic action by universities contrary to the interests of the government.

The theoretical and empirical analyses conducted for this study showed that both the agency variables and agency costs can offer either general or case specific ex-ante as well as ex-post insights concerning the costs, efficiency and effectiveness of particular governance methods. Theoretical analysis also allows for some general conclusions to be drawn regarding government-university relationships. First, utilization of agency variables to analyze the government-university relationship shows how difficult it is for the government to govern the task accomplishment by the universities. It shows that although there are instruments of governance available, each of these instruments seems to have its own weaknesses. This conclusion leads to the suggestion that the government will inevitably suffer relatively high agency costs. The only difference seems to be in how large these costs might become and how they are composed. Second, determining the agency costs can include interesting speculation as to whether the costs of governance could in some cases exceed the costs of the actual opportunism. If the costs resulting from opportunism remain lower than the governing costs, the
best solution for government could be to reduce its governing efforts. However, as it was difficult to provide solid proof of the existence of concrete forms of opportunistic behavior, the empirical calculation of agency costs would be very difficult or even impossible. Nevertheless, indirect estimates of high / low agency costs can still usually be made, especially with regard to governance costs.

As a whole, all the strengths offered by agency theory to examine the government-university relationship lie in the theory’s unique perspective on issues that other theories do not contribute to, to the same extent. Basically all of the insights that agency theory can offer are related to the question of universities’ compliance with the government’s goals in exchange for the resources they receive from the government. Analyzing different forms of university opportunism and issues related to governing the opportunism are clearly the strongest and most unique insights that the theory can offer. Agency theory can provide alternative insights by examining the economic characteristics of universities with respect to the behavioral implications for government governance and resource allocation mechanisms. As such, it seems to be able to offer a broad but logically consistent framework about the government’s governance of universities, in which different theoretical concepts and approaches can be integrated in a meaningful way.

The greatest weaknesses of agency theory are related to the narrowness of its behavioral assumptions and of the focus of the theory. Agency theory seems to build on a rather narrow model of human motivation. The fact that agency theory focuses only on self-interested and opportunistic human behavior means that the theory ignores a wider range of human motives. Even though agency theory does not suggest that self-interest-based opportunistic behavior is the only motivator of human beings, the problem is that the theory – with the exception of the agency variable of output / outcome uncertainty – fails to explain the principal’s losses by any factor other than agent opportunism. This problem is especially severe in analyzing government-university relationships where opportunistic behavior can be detected mainly from the universities’ poor performance. On the other hand, unlike the case with opportunism, universities do not usually have any incentive to hide the non-opportunistic reasons for poor performance, thereby moderating this weakness.
In addition to the fact that the behavioral assumptions of agency theory can create unique insights, they can also limit the scope of the theory. Agency theory pays attention to mainly formal and economic aspects of government-university relationships. However, in addition to their economic character, universities are also socio-cultural organizations as regards the norms, incentives and organizational structure on which their behavior is based. Another problem is that agency theory examines agency relationships without questioning the legitimacy or justification of the principal’s goals. Although this does not reduce the coherence and robustness of the theory, it is a clear limitation of its scope, especially in the higher education context.

Agency theory also suffers from narrowness of focus in mirroring the complexity and diversity of the empirical reality. It offers only a limited view by focusing on the bilateral interaction between the government and a university in the context which is in reality often surrounded by multilateral networks. In the modern world of higher education, a growing number of stakeholders can be found from inside and outside the universities. The fact that agency theory is not able to include third parties, stakeholders or competing principals holistically in its analysis is clearly a great weakness. Agency theory is able to examine only one of the many agency relationships at a time and it gives no suggestions how to proportionate the relationship under examination to other possible agency relationships of the government or universities. This inability to structure and incorporate the existence of multiple principals and stakeholders creates a danger that can reduce the theoretical and empirical usefulness of the theory.

In conclusion, the strengths and weaknesses of agency theory seem to depend mainly on how the theory is understood and on the context in which it is utilized. If it is understood that agency theory and its behavioral assumptions are incomplete and partial, the theory becomes much more realistic and therefore it provides a justified perspective. As such, agency theory can successfully offer a partial description of the more holistic phenomenon of the government-university relationship.

Within its limits, agency theory offers an analytical tool which can benefit a range of parties interested in examining different aspects of government-university relationships: higher education researchers, higher education community, and higher education policy-makers.
Agency theory underlines some of the most topical questions of modern higher education. The theory possesses enough theoretical parsimony in its concepts, but at the same time these concepts are broad enough to allow for a wide variety of operationalizations to be made. Despite the narrowness of its focus and assumptions, the theory offers a clear, logically consistent and dynamic framework for examining government-university relationship from the selected perspective.

6.2 Limitations of the study and implications for further research

This study has several limitations. First, the theoretical operationalizations of the concepts of agency theory could not include all the possible operationalizations of these concepts. In addition, many concepts of the theory could have been operationalized differently. For this reason it is possible that the empirical analysis might not have been able to identify all the nuances that agency theory could have provided. A second limitation is that it was beyond the scope of this study to examine the empirical applicability of agency theory more extensively. It is possible that additional case studies could have provided information which the utilized case was not able to provide, especially for the examination of individual level opportunism.

The third limitation is that the chosen approach and the data available did not permit the explanatory and predictive capabilities of agency theory in government-university relationships to be determined. In many ways this study has been the first stage in a thorough analysis of the applicability of agency theory to government-university relationships. The focus of this study was mainly on definitions and operationalizations which could nevertheless be considered as groundwork for further research applications, including testing the explanatory and predictive potential of agency theory in government-university relationships.

On the basis of the analyses conducted for the study, it seems that agency theory can offer a wide variety of topics and research questions that might be addressed in future research, both theoretical and empirical. It would be important for future theoretical studies to examine whether new operationalizations of the concepts of agency theory can be made. For instance, defining new types of opportunistic behavior and
examining more deeply the connection between the individual and the institutional level opportunism would be needed in the future, if agency theory continues to be utilized in the theoretical examination of government-university relationships. The existing higher education literature offers a rich base from which these new definitions and operationalizations can be drawn.

Also, investigating the possibility of developing agency theory in line with other theoretical approaches in the same area of interest should be considered. These other approaches include such things as the study of policy instruments, theory-driven program evaluation, and implementation theory. The possibility of merging agency theoretical perspectives with other approaches could benefit both agency theory and these approaches. In addition, agency theory’s inability to adjust to the interaction of multiple principals in the agency framework presents a great challenge for future theoretical and empirical research on this topic. The future will show whether this development work could produce theoretical solutions, which could also be universally adapted to government-university frameworks.

For empirical implications, the analysis in this study can verify that a great number of promising research topics for empirical research are still available. For example, the following questions should be empirically examined: Whether and to what extent extensive screening procedures are able to predict the performance of universities? Whether and to what extent the utilization of different governance mechanisms can be explained by perceived or real informational asymmetries and goal conflicts between government and universities? What are the effects of governance mechanisms on the assumed or perceived opportunistic behavior of universities? Is it possible to create a model for estimating and accounting for agency costs? Under which conditions could governance costs surpass the costs of opportunism? Focusing on intra-university agency relationships and their role and influence on government-university relationships also needs further empirical clarification.

Many of these and other possible research topics could and should be incorporated into empirical testing of the explanatory and predictive capabilities of the agency theory. In fact, this should be the next step in the evaluation of agency theory in the context of government-university relationships.
REFERENCES


