

# Funding Innovative Activities in Firms: The Ownership Structure and Governance Linkage - Evidence from Mongolia

Ernest Nweke, Enkhtuya Bavuudorj

## I. INTRODUCTION

**Abstract**—The harsh realities of the scandalous failure of several notable corporations in the past two decades have inextricably resulted in a surge in corporate governance studies. Nevertheless, little or no attention has been paid to corporate governance studies in Mongolian firms and much less to the comprehension of the correlation among ownership structure, corporate governance mechanisms and trend of innovative activities. Innovation is the bed rock of enterprise success. However, the funding and support for innovative activities in many firms are to a great extent determined by the incentives provided by the firm's internal and external governance mechanisms. Mongolia is an East Asian country currently undergoing a fast-paced transition from socialist to democratic system and it is a widely held view that private ownership as against public ownership fosters innovation. Hence, following the privatization policy of Mongolian Government which has led to the transfer of the ownership of hitherto state controlled and state directed firms to private individuals and organizations, expectations are high that sufficient motivation would be provided for firm managers to engage in innovative activities. This research focuses on the relationship between ownership structure, corporate governance on one hand and the level of innovation on the hand. The paper is empirical in nature and derives data from both reliable secondary and primary sources. Secondary data for the study was in respect of ownership structure of Mongolian listed firms and innovation trend in Mongolia generally. These were analyzed using tables, charts, bars and percentages. Personal interviews and surveys were held to collect primary data. Primary data was in respect of corporate governance practices in Mongolian firms and were collected using structured questionnaire. Out of a population of three hundred and twenty (320) companies listed on the Mongolian Stock Exchange (MSE), a sample size of thirty (30) randomly selected companies was utilized for the study. Five (5) management level employees were surveyed in each selected firm giving a total of one hundred and fifty (150) respondents. Data collected were analyzed and research hypotheses tested using Chi-Square test statistic. Research results showed that corporate governance mechanisms were better and have significantly improved overtime in privately held as opposed to publicly owned firms. Consequently, the levels of innovation in privately held firms were considerably higher. It was concluded that a significant and positive relationship exists between private ownership and good corporate governance on one hand and the level of funding provided for innovative activities in Mongolian firms on the other hand.

**Keywords**—Corporate governance, innovation, ownership structure, stock exchange.

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INNOVATION is central to enterprise success and is crucial for the competitiveness of the modern economy as well as for ensuring and sustaining high standards of living and welfare. The ability of a firm to create technical breakthroughs and turn them into commercial products is key to its sustainability financially. Innovation is equally important for countries as it is a key determinant of competitive performance especially for emerging economies as they struggle to improve productivity and income levels. It is in fact the life wire of any firm or country that aims to remain competitive in today's competitive world. These facts notwithstanding, Marcela and Paul observed that corporate governance scholarship scarcely focuses on innovation [1]. The increased interest in this area now stems from the realization that innovation is inextricably linked to firm value and the fact that governance and other firm attributes significantly impact on a firm's ability to innovate.

What then is innovation? Innovation is said to have taken place when a firm "transforms knowledge and ideas into new products, processes and systems for the benefit of the firm and its stakeholders" [2]. Put in another way, it is a process that ultimately results in something new and valuable to consumers and begins "with the generation of new knowledge targeted at the discovery of new products and processes, and ending with their commercial exploitation"[3] Hence, Innovation clearly does not only involve the creation of new products for consumers but also includes the development of new methods of production and new forms of organization within firms. Furthermore, OECD has provided an all encompassing definition of innovation. For OECD it is "the implementation of a new or significantly improved product (good or service) or process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations" [4]. This definition clearly identifies four broad categories of innovation; product innovation, process innovation, marketing innovation and organizational innovation. Finally, on innovation, the Parliament of Mongolia adopted the Mongolian national law on science and technology in 2006. In this law, "innovation" is described as "transformation of the results and products of researchers and introducing the end product to industries and services [5].

As for ownership structure, two main broad categories of enterprise ownership structures exist: private and public. Private ownership simply entails the ownership of a company by people or organizations that are not part of the government

of a country. Such firms are proven harbingers of efficiency, good corporate governance, profitability and economic growth. It should be noted that good corporate governance practice fosters economic development through transparency, disclosure equitable treatment of stakeholder and improved investor confidence. Ownership in privately held firms may be either dispersed or concentrated. Public ownership or state invested firms on the other hand are companies in which the state has stakes either wholly or partially. State ownership has its merits and demerits. Its unintended consequences include the potential for firm mismanagement, corruption, lax in control, supervisions and content of regulations. As a result, non-state-invested firms have been touted to be more efficiently ran and to adhere to high levels of corporate governance.

Whatever form ownership structure takes, funding for innovation is crucial in all firms. Generally, over the past few years, both developed and developing countries have implemented a series of technological programs aimed at stimulating and promoting R&D activities throughout the fabric of their economies. The goal has been to make productive units more competitive in order to improve the economic indicators of their countries. Among the tools used in some of these programs for innovation and the most widely used and efficient ones are the so-called financial assistance for innovative companies. Financial assistance for innovation may be provided to the companies indirectly by way of tax incentives or directly via subsidies, soft loans, and public funding [6]. Mongolia has in this regard taking various steps to boost innovation in viable firms. On the other hand, "corporate governance involves a set of relationships between a company's management, its board, its shareholders and other stakeholders" [7]. Good corporate governance provides proper incentives for the boards of companies and management to pursue objectives that are in the best interests of the company and its shareholders and should facilitate effective monitoring. Indeed, top management of firms play a major role in the implementation of firms' mission and strategies and in the control of their day to day business activities enhance levels of firms' innovative activities and hence performance in the future. In addition, the International Finance Corporation (IFC), an arm of the World Bank observes that "good corporate governance contributes to sustainable economic development by enhancing the performance of companies and increasing their access to outside capital" [8].

Since the innovation-corporate governance-ownership structure linkage is critical to firm performance, national growth and competitiveness, the objective of this paper is to highlight its impact on funds availability for innovative activities in firms utilizing Mongolia as a case in point.

## II. OWNERSHIP OF LISTED FIRMS IN MONGOLIA: TRANSITION FROM STATE TO PRIVATE OWNERSHIP

Mongolia is a beautiful land-locked Asian country, very rich in natural resources with formidable growth prospects. Transitioning from a socialist to a democratic system of governance and free market economy in the early 90s,

Mongolia is today one of the fastest growing economies with GDP growth rate for 2011 reaching an all time high of 17.50% and 12% for 2013 according to the World Bank [9].

The current economic scenario is in sharp contrast with the situation in the early 1990s when the economy was in doldrums; state invested enterprises accounted for 96% of the economy with the bulk of the support for the economy coming in the form of Soviet aids. Soviet aids accounted for as much as two thirds of the GDP. This enormous level of aid disappeared with the fall of the Soviet Union between 1990 and 1992, pushing the country into deep recession. Government quickly responded with transition to democratic rule, establishing the Mongolian Stock Exchange (MSE) to facilitate the privatization of state owned enterprises. Government establishments were marred by large scale inefficiencies and corruption. Privatization thus became a sure option to improve the competitiveness of the Mongolian economy.

TABLE I  
OWNERSHIP OF MSE LISTED COMPANIES AS AT JANUARY 2016

| OWNERSHIP OF MSE LISTED COMPANIES AS AT MARCH 2015 | NUMBER OF COMPANIES |
|--|---------------------|
| 100% State owned companies                         | 20                  |
| Partly state owned companies                       | 15                  |
| Non-state owned companies                          | 285                 |
| <b>TOTAL</b>                                       | <b>320</b>          |

Table I clearly illustrates how the ownership structure of listed enterprises has changed over time on the MSE. 96% of listed companies in the early stages of the MSE were state owned, as at January 2016, the picture has changed dramatically.

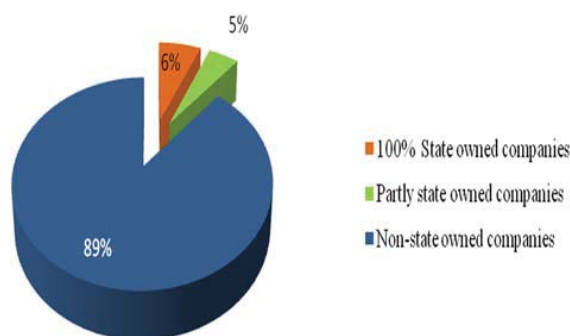


Fig. 1 Ownership of MSE listed companies as at January, 2016

Fig.1 illustrates the sharp decline in state ownership of MSE listed companies. It is easily observable that the change in the ownership structure of Mongolian enterprises brought about massive improvement in economic performance and unparalleled contributions to GDP growth by the private sector. In terms of GDP contribution, the private sector accounted for 56% in 1996, 71.8% in 1999, 75% in 2001 and over 80 percent as of today. Table II further illustrates this transformation.

### III. INNOVATION TREND IN MONGOLIA: PRE AND POST DEMOCRATIC TRANSITION

The tendency for Mongolian firms to engage in innovation depends partly on the incentives provided by the functioning and size of the market. Unfortunately, markets in Mongolia are mostly small, fragmented and imperfect as a result of lack of infrastructure, low per capita income, as well as insufficiently developed regulatory frameworks and institutional constraints. These provide little or no incentive for innovative activity. In addition to these, limited access to finance, a lack of market information, poor governance mechanisms and skill shortages among entrepreneurs are other constraints to innovation.

Generally, although there is little awareness of the long-term benefits of innovation in Mongolia as portrayed in Fig.2, it is clear that the trend had been on the rise since the democratization process and transfer of public assets to private ownership. The fall in 2015 to 36.4 was as a result of the lull in Mongolian economy in this period affecting funds availability to firms. It is therefore not surprising that Mongolia's ranking on world innovation index by for the French "Institut Européen d' Administration des Affaires" (INSEAD) and World Intellectual Property Organization (WIPO) though low has been quite low progressive. This fact becomes clearer when compared with rankings for other emerging Asian nations.

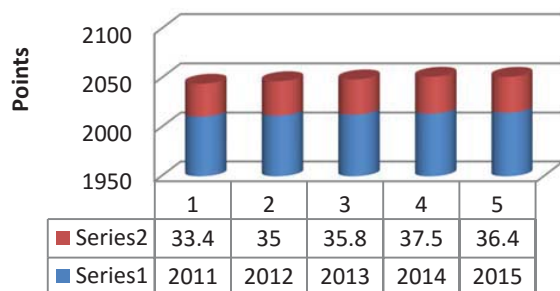


Fig. 2 Mongolia innovation index 2011-2015  
Source: Author-prepared with data from [10]

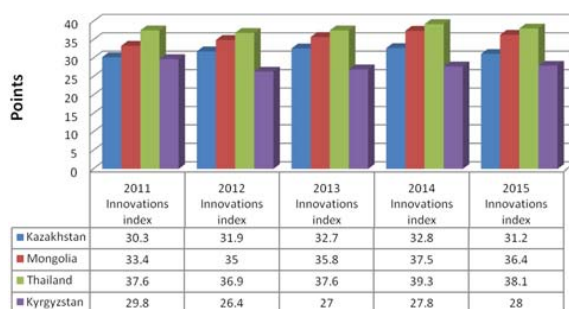


Fig. 3 Four-nation Comparative innovation index analysis  
Source: Author-prepared with Data from [10]

A closer look at three key components considered in world innovation ranking in Fig.4 shows that R&D expenditure

representing "capital expenditures (both public and private) on creative work undertaken including knowledge of humanity, culture, and society, and the use of knowledge for new applications" [11] has been on the decline.

This has consequently led to a fall in patent and trademark applications by residents although trademark applications picked up between 2008 and 2011.

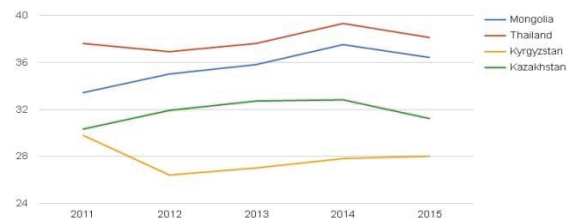


Fig. 4 Four-nation Comparative innovation index analysis 2  
Source: Author-prepared with data from [10]

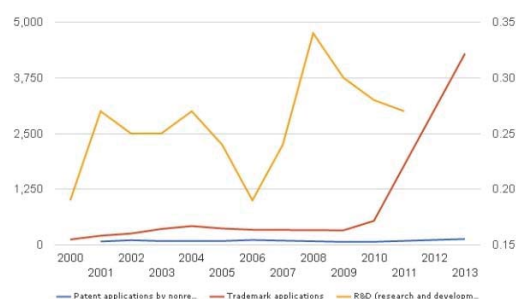


Fig. 5 Mongolia: Patent applications by nonresidents; Trademark applications; R&D (research and development) expenditure  
Source: Author-prepared with Data from [10]

### IV. THEORETICAL FRAMEWORK

Principal-principal theory, Agency theory and resource-dependence theory are three theories that offer an explanation regarding the position of innovation in firms. Principal – principal conflicts refer to the conflicts between two classes of principals; controlling shareholders and minority shareholders [12]. While principal – agent conflicts are especially relevant in firms characterized by a separation of ownership and control, PP conflicts are important in firms with concentrated ownership and control with a controlling shareholder [13]. This is the scenario in big corporations in Mongolia characterized by dominant or major shareholder and minority shareholders. Principal-principal theorists argue that different types of owners may or may not have aligned incentives regarding corporate strategy when the strategy does not uniformly impact the benefits and costs of different owners. PP conflicts have firm-level consequences that directly impact on innovative activities and organizational performance. The entrenchment of the large shareholders, namely the State and its institutions, sets up a principal–principal conflict between the state owner's strategic and political interests and the minority owner's financial interests

Stakeholder-agency theory on the other hand suggests that the firm could be seen as a nexus of contracts among resources

holders; shareholders, managers, other employees and finance companies that provide supplementary finance. Its paradigm encompasses all explicit and implicit stakeholders unlike mainstream agency theory. In this scenario, co-ordination provided by corporate governance mechanisms is required to minimize opportunistic tendencies that jeopardize innovation.

Lastly, main stream agency theory focuses mainly on the divergence of manager-owner interests. The interests of managers as agents are incongruent with those of the owners as principals. As both groups have different utility functions, direct conflict exists as to the best use economic resources should be put to [14]. These differences in utility functions affect a firm's investment into innovation. R&D investments are risky and long-term projects and even though innovation projects might lead to potentially high rewards, managers under-invest into innovation compared to owners due to the risk associated with those projects. Innovation projects indeed face a high risk of failure which may have adverse effects on a manager's career and may subsequently result in loss of job.

#### V. METHODOLOGY

This study is empirical in nature and consequently derives data from both reliable secondary and primary sources. It begins with an introduction explaining the key concepts, highlights the changing structure of the ownership of Mongolian listed firms and looks at the problem scenario, presents and analyses research data using tables and charts, tests the research hypotheses using chi-square test and finally makes some conclusions based on the research findings.

##### A) Collection and Analysis of Secondary Data

Informative and authoritative websites, government literatures and National Statistics Office (NSO) were consulted for secondary data. Secondary data for the study was analyzed using charts, bars and percentages.

##### B) Primary Data Collection and Analysis

Interviews and surveys were conducted to collect primary data. Primary data was in respect of corporate governance practices in Mongolian firms and was collected using questionnaire. The questionnaire is structured in such a way that it focuses on three important dimensions of internal corporate governance of Mongolian firms, namely: ownership concentration, the board of directors, and whether external or internal CEO positively impact firm governance structures. There were a total of twenty-four (24) questions on the questionnaire; eight (8) each pertaining to each dimension. Responses to the questions were measured using Likert five point-scale; strongly agree to strongly disagree

##### C) Population and Sample Size

Out of a population of three hundred and twenty (320) firms listed on the Mongolian Stock Exchange, a sample size of thirty (30) randomly selected companies was used for the study. Five (5) management level employees were surveyed in each selected company giving a total of one hundred and fifty

(150) respondents. This was to ensure that only knowledgeable and experienced staff were surveyed.

#### VI. DEMOGRAPHICS OF RESPONDENTS

Set out below are the years of experience and ages of the respondents;

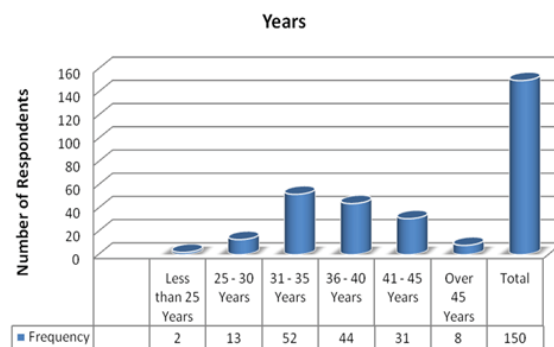


Fig. 6 Years of Experience of Respondents

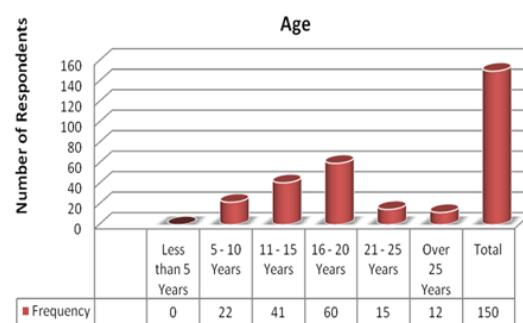


Fig. 7 Age Ranges of Respondents

#### VII. TEST OF HYPOTHESES AND RESULTS

Questionnaire responses were analyzed and research hypotheses were tested using Chi-Square.

The test results presented below are in respect of questions relevant for hypotheses testing;

##### Hypothesis 1

Corporate governance practices in Mongolian firms in the post-soviet era have not improved funds availability for innovative activities.

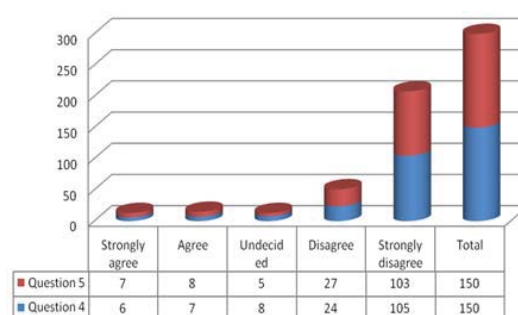


Fig. 8 Analysis of questions related to test of Hypothesis 1

TABLE III  
TEST STATISTICS AND VALIDITY1

| Test Statistics  |             |
|--|-------------|
| X <sup>2</sup> cal (Chi-Square Calculated) =                           | 266.2283183 |
| df = 4   |             |
| $\alpha = 5\%$   |             |
| X <sup>2</sup> tab (Chi-Square Tabular, X <sup>2</sup> 0.01,4) = 9.488 |             |
| Test validity  |             |
| All Fe are > 5   |             |
| Min. Fe = 45   |             |
| Sample size is > 50  |             |
| Each Class is > 5  |             |

The results show that the  $X^2_{cal} = 266.22$ ,  $X^2_{tab} = 9.49$  at 4 degrees of freedom.  $X^2_{cal}$  is  $> X^2_{tab}$  therefore the null hypothesis Ho1: Corporate governance practices in Mongolian firms in the post-soviet era have not improved funds availability for innovative activities is rejected and the alternate hypothesis H1: Corporate governance practices in Mongolian firms in the post-soviet era have improved funds availability for innovative activities is accepted.

### Hypothesis 2

Ownership structure in Mongolian companies does not influence funds availability for innovative activities.

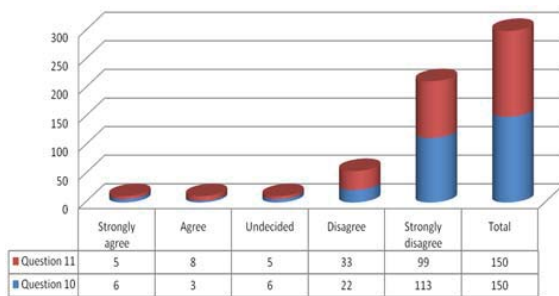


Fig. 9 Analysis of questions related to test of Hypothesis 2

TABLE IV  
TEST STATISTICS AND VALIDITY2

| Test Statistics  |            |
|--|------------|
| X <sup>2</sup> cal (Chi-Square Calculated) =                           | 296.448542 |
| df = 4   |            |
| $\alpha = 5\%$   |            |
| X <sup>2</sup> tab (Chi-Square Tabular, X <sup>2</sup> 0.01,4) = 9.488 |            |
| Test validity  |            |
| All Fe are > 5   |            |
| Min. Fe = 45   |            |
| Sample size is > 50  |            |
| Each Class is > 5  |            |

The test results show that the  $X^2_{cal} = 296.44$  and  $X^2_{tab} = 9.489$  at 4 degrees of freedom.  $X^2_{cal}$  is  $> X^2_{tab}$  therefore the null hypothesis Ho2: Ownership structure in Mongolian companies does not influence funds availability for innovative activities is rejected and the alternate hypothesis H2: Ownership structure in Mongolian companies influences funds availability for innovative activities is accepted.

### Hypothesis 3

Corporate governance practices in privately held companies are not better than corporate governance practices in state-owned companies in Mongolia.

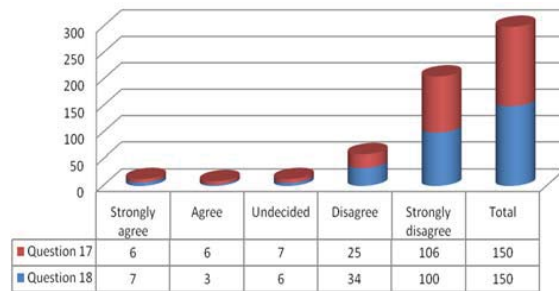


Fig. 10 Analysis of questions related to test of Hypothesis 3

TABLE V  
TEST STATISTICS AND VALIDITY3

| Test Statistics  |             |
|--|-------------|
| X <sup>2</sup> cal (Chi-Square Calculated) =                           | 285.8091037 |
| df = 4   |             |
| $\alpha = 5\%$   |             |
| X <sup>2</sup> tab (Chi-Square Tabular, X <sup>2</sup> 0.01,4) = 9.488 |             |
| Test validity  |             |
| All Fe are > 5   |             |
| Min. Fe = 45   |             |
| Sample size is > 50  |             |
| Each Class is > 5  |             |

For test of hypothesis 3, the results show that the  $X^2_{cal} = 285.80$  and the  $X^2_{tab} = 9.49$  at 4 degrees of freedom.  $X^2_{cal}$  is  $> X^2_{tab}$  therefore the null hypothesis Ho3 that Corporate governance practices in privately held companies are not better than corporate governance practices in state-owned companies in Mongolia is rejected and the alternate hypothesis H3 that Corporate governance practices in privately held companies are better than corporate governance practices in state-owned companies in Mongolia is accepted.

## VIII.CONCLUSION

This paper has highlighted the influence private ownership and corporate governance mechanisms in Mongolian companies have had on funds availability for innovative activities. The paper specifically provides empirical evidence that there is a positive relationship between ownership structure and internal corporate governance mechanism of firms on one hand and funds availability in Mongolian companies for innovative activities on another hand. The three null hypotheses formulated at the beginning of the study to guide and provide direction were all rejected and their corresponding alternatives accepted.

The study discovered that private ownership of firms has generally led to improved corporate governance practices in Mongolian companies and has overall resulted in better funds availability for innovative activities.

By way of recommendation, the ongoing privatization program of Mongolian government is a step in the right

direction and should be cautiously fast tracked. It is imperative that corporate governance mechanisms in Mongolian firms be further improved in order to boost investor confidence, attract foreign capital, further improve funds availability for innovative activities and ultimately make the economy more competitive.

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