Financial Evaluation of National Iranian Oil Company Investment in the South Pars

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Abstract

This thesis deals with the evaluation of national Iranian oil company in south pars field. Long term investments are very essential to economic growth. Investment in Iran is not only is a necessity for increasing national welfare but also has become a tool for survival. Financial evaluation has always been important for investors in helping them budget and manage their income, save and invest efficiently.

In Iran oil revenues have been the most important factor in determining national investment during the past years. Dependence of Iran's economy on oil revenue has become more and more. Iran holds the world's third largest known oil reserves, and second largest natural gas reserves. Iran looks like an energy superpower. It is the second largest oil producer in the Organization of Petroleum Exporting Countries (OPEC). Due to limitations of internal financial resources and also intense competition to attract foreign financial so finding financial resources and optimum use of it resources has been a fundamental issue for is Iran's governments in recent decades. Therefore, accurate assessment of oil and gas projects and selected projects that further national interests with their investment allocation, has been considered as a necessity.

This research is seeking to assess financial investments in Iranian National Oil Company (the Oil Company and Pars gas). Basic goals of research is to evaluate national Iranian oil company investment in pars oil and gas field and Compares the return on investments in this field to the other governmental companies, private companies and bank and insurances companies. To achieve the main goal the following activities should be done. As the numbers show, the rate of return obtained from the Pars Oil and Gas Company is much more than Industry average rate of return. At the end, the following suggestions for those interested in this subject are presented.

Introduction

Investment activity plays an important role I every economic organization selection of a new project or a group of projects constitutes one of the main management functions required to ensure business survival .in Iran is not only is a necessity for increasing national welfare but also has become a tool for survival. Projects are vital to success of any enterprise. The project selection is a typical example of multiple criteria decision- making problem.

One of the major tasks of project management is to select a project(s) that maximizes the objectives of a company. In other word, managers must make value-maximizing choices. (Harris and A. Ravi, 1998). The objective of project evaluation is of course the judicious, efficient and optimal use of scarce resources, avoidance of wastages and ensuring their on schedule completion. In order to

achieve maximum results, projects must be well conceived, meticulously planned, carefully implemented leading to their successful fruition. In majority of the underdeveloped countries proper attention is not paid to preparation and appraisal of projects and those in position of authority take the instantaneous improvisation of projects and their thoughtless operation and implementation.

Financial evaluation has always been important for investors in helping them budget and manage their income. The importance of financial evaluation has increased in recent years as a result of both financial market development the increase in the number of demands in financial markets, and demographic, economic and policy changes. In addition, a project evaluation includes strategic evaluation, economic evaluation and social impact evaluation. A financial perspective, in which the focus is on the monetary return to the proponent of the project While the financial evaluation of a project aims at ascertaining the most efficient strategy for delivering the desired output, the strategic evaluation ensures that the project is consistent with the output objectives of the firm. The economic evaluation of the project, however, seeks to ensure that the delivered output is benefiting the public at large. Financial evaluation of a project aims at ascertaining the most efficient strategy for delivering the desired output. Financial appraisal is the most important part of the evaluation because the project cannot be successful if it is financially unviable, even though it may be technically and commercially feasible. Financial evaluation is usually conducted by quantitative measures like net present value, internal rate of return, profitability index (Maciej, 2005).

Energy is the most essential indicator of economic and social development. The need for energy is gradually increasing due to the increasing world population, technological developments and the new demands that modern technology brings. The global energy requirements were primarily provided by the combustion of fossil fuels. In 2008, the global share of energy from fossil fuels was 87% of the total primary energy consumption. This primary energy consumption consists of 34.7% oil and 24.1% natural gas (Ayse, 2010).

In the economic literature the organization of the petroleum exporting countries(OPEC)is usually treated as a monopoly and cartel .the dominant firm model is one of the variants of the cartel model(Raymond,2010).Iran holds the world's third largest known oil reserves, and second largest natural gas reserves. Iran looks like an energy superpower. Iran produces 5.1 percent of the world's total crude oil it is the second largest oil producer in the Organization of Petroleum Exporting Countries (OPEC). Iran's economy is heavily dependent upon oil earnings. Oil proceeds represented about 18.7 percent of gross domestic product (GDP). However, the importance of the hydrocarbon sector to Iran's economy has been far greater (Kurtis, Glenn ; Eric Hooglund ,2010).

Due to limitations of internal financial resources and also intense competition to attract foreign financial resources financial resources and optimum use of it to prevent pressure loss and also extract from current fields ,and exploitation of new oil and gas fields in recent decades has been a fundamental issue for is Iran's governments. So finding financial resources in our country with limited resources is difficult. Therefore, accurate assessment of oil and gas projects and selected projects that further national interests with their investment allocation, has been considered as a necessity. Considering the importance of South Pars gas field and the impact of investments in the gas field of economy "investment evaluation conducted in National Iranian Oil Company (Pars Oil and Gas Company) "as the subject of this research has been selected.

Method and Materials

Theoretical basis of the research refer to investment and also investment valuation methods. In these research investment valuation methods has been used. These methods include, return on investment (ROI), return on assets (ROA), return on owners (ROE)' equity and internal rate of return (IRR). The independent variables in this study is the return on investment in Iranian oil company (south pars field and also return on investment or return on assets in governmental companies, bank and insurance companies and industrial companies in private section.

In this research we use of return on common equity (ROE), return on asset (ROA) and internal rate of return (IRR) for evaluating financial statement of desired companies.

Return on Equity (ROE)

Return on average common equity, return on net worth, Return on ordinary shareholders' funds) (equity) measures the rate of return on the ownership interest (shareholders equity) of the common stock owners. It measures a firm's efficiency at generating profits from every unit of shareholders' equity (also known as net assets or assets minus liabilities). ROE shows how well a company uses investment funds to generate earnings growth. ROE is equal to a fiscal year's net income (after preferred stock dividends but before common stock dividends) divided by total equity (excluding preferred shares), expressed as a percentage (Jahankhani, 1999). As with many financial ratios, ROE is best used to compare companies in the same industry. ROE can be computed as:

$$ROE = \frac{\text{net income after tax}}{\text{shareholders equity}}$$

The importance of R0E as an indicator of performance makes it desirable to divide ratio into several components that provide insights into the causes of a firm's ROE or any changes in it. This breakdown of ROE into component ratio is generally referred to as the DuPont system. The DuPont formula, also known as the strategic profit model, is a common way to break down ROE into three important components. Essentially, ROE will equal the net margin multiplied by asset turnover multiplied by financial leverage. In DuPont system ROE can be broken down into two ratios. These ratios are profit margin and equity turnover. (Frank & Keith, 2003). ROE can be computed as:

$$ROE = \frac{\text{net income}}{\text{net sales}} \times \frac{\text{net sales}}{\text{common equity}}$$

Return on Assets

Return on assets is one of the elements used in financial analysis using the DuPont identity .The return on assets (ROA) percentage shows how profitable a company's assets are in generating revenue(Susan V, 2008). ROA can be computed a:

$$ROA = \frac{\text{net income}}{\text{total assets}}$$

This number tells you what the company can do with what it has, i.e. how many dollars of earnings they derive from each dollar of assets they control. It's a useful number for comparing competing companies in the same industry. The number will vary widely across different industries. Return on assets gives an indication of the capital intensity of the company, which will depend on the industry; companies that require large initial investments will generally have lower return on assets.

Return on assets is an indicator of how profitable a company is before leverage, and is compared with companies in the same industry. Since the figure for total assets of the company depends on the carving value of the assets, some caution is required for companies whose carrying value may not correspond to the actual market value. Return on assets is a common figure used for comparing performance of financial institutions (such as banks), because the majority of their assets will have a carrying value that is close to their actual market value. Return on assets is not useful for comparisons between industries because of factors of scale and peculiar capital requirements (such as reserve requirements in the insurance and banking industries).

Internal rate of Return (IRR)

In more specific terms, the IRR of an investment is the discount rate at which the net present value of costs (negative cash flows) of the investment equals the net present value of the benefits (positive cash flows) of the investment. Despite a strong academic preference for NPV, surveys indicate that executives prefer IRR over NPV (Pogue, M, 2004).

In this research we want to compare the investment rate of return in pars south field to the investment rate of other Iranian active companies in different fields. for this purpose some hypothesis have defined. Any hypothesis is a specific statement of prediction. This prediction may be relation between two or more variables. In this research we want to compare several groups binary. Each of the two populations being compared should follow a normal distribution (Zimmerman, 2004).

Main Hypothesis (H0)

H0: return on investment done by Iranian Oil Company in the south pars field is higher than conventional rate

Subsidiary Hypothesis

H1: return on investment in the south pars field is more than the Return on Assets of state-own companies.

H2: Return on investment in the south pars field is more than the Return on Assets of banks and insurance companies

H3: Return on investment in the south pars field is more than the Return on assets of industrial companies in private section.

H4: Return on investment in the south pars field is more than the Return on assets of companies in Iranian oil and gas chemical products.

In this study sample size is large and the distribution from which the samples are derived is considered is normal so for calculating p-value we use of one-tailed T test. One of the most important applications of statistical theory is hypothesis testing or significant test. Scientists generally base scientific hypotheses on previous observations that cannot satisfactorily be explained with the available scientific theories. Even though the words "hypothesis" and "theory are often used synonymously, a scientific hypothesis is not the same as a scientific theory. For a hypothesis to be put forward as a scientific hypothesis, the scientific method requires that one can test it (Hilborn, Ray; Mangel, Marc 1997).

Hypothesis testing is sometimes called confirmatory data analysis, in contrast to exploratory data analysis. In frequency probability, these decisions are almost always made using null-hypothesis tests One use of hypothesis testing is deciding whether experimental results contain enough information to cast doubt on conventional wisdom(Cramer, Duncan; Dennis .Howitt ,2004).

For hypothesis test, researchers start with an assumed value for the parameter of community. After gathering information statistic obtained is compared with the assumed parameters. If these two numbers have big differences, hypothesis is rejected .According to what was expressed. Using the following statistical test is suitable for testing hypotheses of this study (Azar.A ; Momeni.M 2001).

$$z_0 = \frac{(\overline{x}_1 - \overline{x}_2)}{\sqrt{\dfrac{s_p^2}{n_1} + \dfrac{s_p^2}{n_2}}}$$

$$s_p^2 = \frac{(n_1 - 1)s_1^2 + (n_2 - 1)s_2^2}{n_1 + n_2 - 2} .$$

For analyzing and interpretation of data we use of computer software SPSS and for testing hypothesis we use of Z-test. In this section we use of statistical assumption and statistical testing.

Main Sample

In order to test the main hypothesis (H0), 60 companies participate in the Tehran Stock Exchange were selected as a sample. Financial statements of these companies for a three-year period were extracted and then Return on Asset (ROI) Return on Equity (ROE) was calculated.

State-own Company's Sample

In order to test the first sub-hypothesis (H1), financial statements of 30 industrial State-own companies has been collected as a sample. Financial statements of these companies for a three-year period were extracted and then Return on Asset (ROI) Return on Equity (ROE) was calculated.

Banks and Insurance Sample

In Iran's capital market, there are 18 active public and private banks. In the insurance market there are the same numbers of active public and private insurance. In this research Banks and insurance from both groups have been selected as a sample. In order to test the second sub-hypothesis (H2), 12 banks and insurance in public and private sector has been collected as a sample. Financial statements of these companies for a three-year period were extracted and then Return on Asset (ROI) Return on Equity (ROE) was calculated.

Private- Company Sample

In order to test the third sub-hypothesis (H3), as shown in the table below, financial statements of 30 companies in the private sector has been collected as a sample. Financial statements of these companies for a three-year period were extracted and then Return on Asset (ROI) Return on Equity (ROE) was calculated. These companies have been selected from different industrial branch in the private sector by Using stratified sampling method.

Oil and Gas and Chemical Industries Companies' Sample

Companies active in oil and gas and chemical industry have been divided into two groups. The first group is belonging to the private sector. The second group is those who belong to the government. The major companies are affiliated to the Iranian Oil Ministry. In this research, Companies from both groups have been selected a sample. In order to test the forth sub-hypothesis (H4), 25 companies in the oil and gas and chemical industries have been collected as a sample. Financial statements of these companies for a three-year period were extracted and then Return on Asset (ROI) Return on Equity (ROE) was calculated.

South Pars Field Sample

As was discussed at the beginning of the chapter, the Pars region has been divided into 28 phases. Some of these phases have been completed. And some phases are evolving. Number 12 was chosen phase. From this sample, 9 operational phases were completed and are in operation and 3 phases are evolving. For each of these phases, the amount of initial investment, annual income and investment rate of return was calculated. Information obtained from this sample is as follows. Project life has been considered 25 years. (Aalia. J.2006).

     The Results of Hypotheses Testing:

     In this section, the hypothesis have been tested and the results have been expressed

Main Hypothesis Testing

In order to test this hypothesis, Rate of return on assets obtained from the original sample will be compared with rate of return obtained from Pars Oil and Gas Company (Investment carried out in south pars field). In order to do test this hypothesis, we calculate significant value by Use of statistical test discussed in previous sections. Significant value (p-value) for ROA and ROE is 6.356 and 5.538 and is larger than α-level (1.96). So with 95 percent confidence we can say that the return on investment done by Iranian Oil Company in the south pars field is higher than conventional rate (Industry average rate of return on assets). Distribution frequency and compare mean scores (ROA &ROE) between Main Sample and South pars company samples.

Table 1:

Scores / Samples	Number	Mean	Std. Deviation	T- VAL	DF	Sig
Main Sample (ROA)	60	3.531	2.403			
South pars (ROA)	12	55.750	28.438	6.356	70	.000
Total	**72**	**59.281**	**30.841**			
Main Sample (ROE)	60	10.095	5.768			
South pars (ROE)	12	55.750	28.438	5.538	70	.000
Total	**72**	**65.845**	**34.251**			

*ROA: Return on Assets
*ROE: Return on Equity

Finding of this table shows that distribution between Main Sample and South pars company samples is deferent. In other word, T- VAL test shows the mean differences(ROA &ROE) between Main Sample and South pars company samples is significant (p = .000)

Testing the First Subsidiary Hypothesis

This hypothesis stated that the return on investment done by Iranian Oil Company in the south pars field is higher than the Return on Assets and the return on equity obtained from state-own companies.

In order to test this hypothesis, Rate of return obtained from the state-own companies sample will be compared with rate of return obtained from Pars Oil and Gas Company (Investment carried out in south pars field). In order to do test this hypothesis, we calculate significant value by Use of statistical test discussed in previous sections. Significant value (p-value) obtained from this test are for ROA and ROE is 6.418 and 5.528 and are larger than α-level (1.960). So with 95 percent confidence we can say that the return on investment done by Iranian Oil Company in the south pars field is higher than the rate of Return on Assets and equity of state-own companies. Distribution frequency and compare mean scores (ROA &ROE) between state-own companies sample and South pars company sample

Table 2:

Scores / Samples	Number	Mean	Std. Deviation	T- VAL	DF	Sig
State-own co (ROA)	25	2.964	2.483			
South pars (ROA)	12	55.750	28.438	6.418	37	.000
Total	**37**	**58.696**	**30.921**			
State-own co (ROA)	25	7.07	3.84			
South pars (ROE)	12	55.750	28.438	5.538	37	.000
Total	**37**	**62.82**	**34.761**			

Finding of this table shows that distribution between Main Sample and South pars company samples is deferent .in other word, T- VAL test shows the mean differences (ROA &ROE) between Main Sample and South pars company samples is significant (p = .000).

Testing the Second Subsidiary Hypothesis

This hypothesis stated that the return on investment done by Iranian Oil Company in the south pars field is higher than the Return on Assets and the return on equity obtained from bank and insurance companies. In order to test this hypothesis, Rate of return obtained from the state-own companies sample will be compared with rate of return obtained from Pars Oil and Gas Company (Investment carried out in south pars field). In order to do test this hypothesis, we calculate significant value by Use of statistical test discussed in previous sections. Significant value (p-value) obtained from this test for ROA and ROE is 6. 438 and is larger than α-level (1.960). So with 95 percent confidence we can say that the return on investment done by Iranian Oil Company in the south pars field is higher than the rate of Return on assets and equity of banks and insurance companies. Distribution frequency and compare mean scores (ROA &ROE) between bank and insurance companies sample and South pars company sample.

Table 3:

Samples \ Scores	Number	Mean	Std. Deviation	T- VAL	DF	Sig
Bank & Insurance co(ROA)	12	2.7667	2.00877			
South pars (ROA)	12	55.7500	28.438	6.438	24	.000
Total	**24**	**58.51**	**31.35**			
Bank & Insurance co(ROE)	12	6.4833	3.75035			
South pars (ROE)	12	55.7500	28.438	5.950	24	.000
Total	**24**	**62.23**	**34.018**			

Finding of this table shows that distribution between bank and insurance companies sample and South pars company sample is deferent .in other word, T- VAL test shows the mean differences(ROA &ROE) between bank and insurance companies and South pars company sample is significant (p = .000).

Testing the Third Subsidiary Hypothesis

This hypothesis stated that the return on investment done by Iranian Oil Company in the south pars field is higher than the Return on Assets and the return on equity obtained from private companies.

In order to test this hypothesis, Rate of return obtained from private companies sample will be compared with rate of return obtained from Pars Oil and Gas Company (Investment carried out in south pars field. In order to do test this hypothesis, we calculate significant value by Use of statistical test discussed in previous sections. Significant value (p-value) obtained from this test for ROA and ROE is is6.220 and 6. 220 and 5.250 and is larger than α-level (1.960). So with 95 percent confidence we can say that the return on investment done by Iranian Oil Company in the south pars field is higher than the rate of Return on assets and equity of private companies. Distribution frequency and compare mean scores (ROA &ROE) between private insurances companies sample and South pars company sample.

Table 4:

Scores / Samples	Number	mean	Std. Deviation	T- VAL	DF	Sig
Private co (ROA)	30	4.5833	2.9127			
South pars (ROA)	12	55.7500	28.438	6.220	42	.000
Total	**42**	**60.333**	**31.35**			
Private co (ROE)	30	12.32	5.58			
South pars (ROE)	12	55.7500	28.438	5.250	42	.000
Total	**42**	**68.07**	**34.018**			

Finding of this table shows that distribution between private companies sample and South pars company sample is deferent .in other word, T- VAL test shows the mean differences(ROA &ROE) between private companies and South pars company sample is significant (p = .000).

Testing the Fourth Subsidiary Hypothesis

This hypothesis stated that the return on investment done by Iranian Oil Company in the south pars field is higher than the Return on Assets and the return on equity obtained from oil gas and chemical companies

In order to test this hypothesis, Rate of return obtained from oil gas and chemical companies sample will be compared with rate of return obtained from Pars Oil and Gas Company (Investment carried out in south pars field). In order to do test this hypothesis, we calculate significant value by Use of statistical test discussed in previous sections. Significant value (p-value) obtained from this test for ROA and ROE is 6.220 and 6. 220 and 6.243 and 5.661 and is larger than α-level (1.960). So with 95 percent confidence we can say that the return on investment done by Iranian Oil Company in the south pars field is higher than the rate of Return on assets and equity of oil, gas and chemical companies. Distribution frequency and compare mean scores (ROA &ROE) between oil, gas and chemical companies sample and South pars company sample.

Table 5:

Scores / Samples	Number	Mean	Std. Deviation	T- VAL	DF	Sig
Oil, gas & chemical co (ROA)	30	4.3867	2.928			
South pars (ROA)	12	55.7500	28.438	6.243	42	.000
Total	**42**	**60.136**	**31.366**			
Oil, gas & chemical co (ROE)	30	11.28	6.47			
South pars (ROE)	12	55.7500	28.438	5.361	42	.000
Total	**42**	**67.03**	**34.90**			

Finding of this table shows that distribution between oil, gas and chemical companies sample and South pars company sample is deferent .in other word, T- VAL test shows the mean differences(ROA &ROE) between oil, gas and chemical companies and South pars company sample is significant (p = .000).

Summary and Conclusion

As mentioned, financial evaluation of National Iranian Oil Company investment in south pars field was the main purpose of this study. We want to compare the investment rate of return in south pars field to the investment rate of other Iranian active companies in different fields. in At the end of this study, as the numbers shows, the rate of return obtained from the Pars Oil and Gas Company is much more than the Return on Assets of state-own companies, banks and insurance companies, companies in private

section and Iranian oil and gas chemical companies. In other word, the rate of return obtained from the Pars Oil and Gas Company is much more than Industry average rate of return (conventional rate).

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