Analysis of the Factors Contributing to the Differences in Financial Data of Energy Companies

Haojun Wang

School of Economics, Lanzhou University, Lanzhou, 730000, China

wanghaojun21@lzu.edu.cn

Abstract. This paper selects 30 companies in the energy industry, which is a fundamental, monopolistic, susceptible, and high-risk industry, and calculates the companies' financial data such as D/V, beta coefficient and WACC. After analyzing the factors contributing to the differences in their financial data, the article concludes that companies engaged in exploration and production of oil and gas have lower D/V, higher beta coefficients and higher WACC, while companies engaged in other businesses such as storage and transportation of oil and gas or utilities such as electricity have the opposite. The companies' ESG performances are also correlated with their financial data. The paper summarizes that companies engaged in exploration and production of oil and gas face higher bankruptcy costs and higher risks of stock price fluctuations. Meanwhile, an energy company's financial data can infer whether it's engaged in traditional oil and gas exploration and production or it's transforming. The article finally argues that for traditional energy companies, promoting transformation can be a good choice.

Keywords: Energy companies, Capital structure, Beta coefficient, Exploration and production of oil and gas.

1 Introduction

In the field of corporate finance and corporate valuation, calculating and analyzing data such as a company's capital structure, beta coefficient and weighted average cost of capital are important tools for exploring the characteristics of companies and industries. This paper hopes to collect, calculate and analyze the public transaction data of multiple listed companies in a specific industry, so as to find the differences in the financial data of companies in the industry, and explore the reasons for the differences, in order to draw regular conclusions and enlightenment.

The energy industry was chosen for this study because: (1) Energy industry is an important basic industry which has a profound impact on the national economy and is related to people's livelihood, industrial system, national defense and other macro fields. It has strong practical significance to research. For example, in countries in the Middle East or other regions, the impact of the energy industry on factors such as national economy is particularly significant [1]. (2) The unique feature of the energy

K. Elbagory et al. (eds.), *Proceedings of the 9th International Conference on Financial Innovation and Economic Development (ICFIED 2024)*, Advances in Economics, Business and Management Research 281,
https://doi.org/10.2991/978-94-6463-408-2_47

industry is that companies in this industry are affected by political and economic factors, geopolitics and global economic conditions, which makes it complex and changeable and worthy of in-depth study. Wars, political instabilities or economic crises can all affect the energy industry. According to The Geopolitics of the Global Energy Transition, the global energy transition is inseparable from geopolitics. Studies have shown that the COVID-19 pandemic in previous years has also had a serious negative impact on the energy industry [2]. (3) In the process of mining resources and operating equipment, companies in the energy industry need to bear higher financial risks and business risks. If the study can gain enlightenment, it can be used as a reference for investors to make choices and for operators to formulate more reasonable strategies to stabilize operations. (4) The energy industry is monopolistic, and companies in the industry are highly dependent on resources. The companies need to ensure a stable supply of resources, have a high technical threshold, and require a lot of capital and state permits to operate. In many countries, energy enterprises are monopolized by the state or the oligopolies, which forms many representative enterprises that are suitable for the research. (5) The energy industry is traditional, but recently sustainable development and ESG assessment are increasingly valued, and there are various new energy sources emerging, so the energy industry needs changing, and the research needs to keep pace with the times. In recent years, the rising cost of mining has also become a factor for energy companies to turn to renewable energy [3]. The signing of the Paris Agreement marks the increasing attention to global warming and transformation of traditional energy. In fact, limiting fossil fuel production is the next important step in climate policy [4]. Research shows that a shift to a net-zero emission energy system is needed within a few decades to combat global warming, which also has a big impact on traditional energy companies [5].

This article selects three of the most representative listed companies in the energy industry during the preliminary analysis: ExxonMobil, Chevron and Shell. For example, Shell's D/V is higher than ExxonMobil's and Chevron's, and Shell's β and WACC are correspondingly lower than ExxonMobil's and Chevron's. However, as to whether these features are regular or not, more samples need to be analyzed. Therefore, this paper draws a more general conclusion by expanding the sample and researching more deeply.

2 Calculation of Financial Data

This paper expands the sample from 3 to 30 representative companies in the energy industry, forming a relatively large sample. All of these companies are ranked at S&P Global Platts Top 250 Global Energy Company Rankings for 2022. As a result, they are all large, global and diversified companies, and they all face the challenges of technological innovation, sustainable development, and strict regulation. Table 1 lists the basic information of these companies, including their codes, countries and rankings.

Table 1. The Basic Information of the 30 Energy Companies

Name	Abbreviation	Country	Ranking
Exxon Mobil Corp	XOM	America	4
Chevron Corp	CVX	America	9
ConocoPhillips	COP	America	10
Energy Transfer LP	ET	America	23
Enterprise Products Partners LP	EPD	America	24
EOG Resources, Inc	EOG	America	26
NRG Energy, Inc	NRG	America	38
Duke Energy Corp	DUK	America	45
Devon Energy Corp	DVN	America	47
NextEra Energy, Inc	NEE	America	50
Occidental Petroleum Corp	OXY	America	52
Pioneer Natural Resources Co	PXD	America	53
American Electric Power Co, Inc	AEP	America	55
Phillips 66	PSX	America	57
The Southern Co	SO	America	60
Dominion Energy, Inc	D	America	61
Exelon Corp	EXC	America	62
Marathon Petroleum Corp	MPC	America	66
ONEOK, Inc	OKE	America	67
Xcel Energy Inc	XEL	America	72
Shell plc	SHEL	Holland	2
Petroleo Brasileiro SA	PBR	Brazil	6
TotalEnergies SE	TTE	France	7
Equinor ASA	EQNR	Norway	9
Eni S.p.A.	E	Italy	18
Canadian Natural Resources Ltd	CNQ	Canada	19
BP p.l.c.	BP	Britain	20
Suncor Energy Inc	SU	Canada	27
Enbridge Inc	ENB	Canada	35
National Grid plc	NGG	Britain	56

Among these 30 companies, 20 are from the United States and 10 are from other countries. American energy companies are selected more because they make up a high proportion of the list, and their financial data are easily available and more accurate. Other companies are mainly from Europe and the Americas. Some companies, including most Asian companies, has not been selected because their financial data on sites such as Yahoo Finance are missing or probably inaccurate (such as having extreme values).

The first data to be calculated in this paper is the leverage ratio of these listed companies in the energy industry. For the data collection of equity (E) of each company, this paper adopts its public Market Capital; For the collection of debt (D) data, this paper uses the Total Debt on the balance sheet of the latest quarter (the second quarter of 2023) disclosed by each company. Then this paper obtains the value (V) of each company by summing E and D, and finally calculates D/V, D/E and E/V. These

data are shown in Table 2, which gives an initial indication of the capital structure of each company, and the differences of each company are gradually revealed.

Table 2. The Capital Structure of Each Company

	E	D	V	D/V	D/E	E/V
XOM	440201	41193	481394	8.56%	9.36%	91.44%
CVX	318245	21514	339759	6.33%	6.76%	93.67%
COP	148561	16444	165005	9.97%	11.07%	90.03%
ET	44031	45458	89489	50.80%	103.24%	49.20%
EPD	59702	28636	88338	32.42%	47.96%	67.58%
EOG	77575	4149	81724	5.08%	5.35%	94.92%
NRG	9286	12312	21598	57.01%	132.59%	42.99%
DUK	67075	78819	145894	54.02%	117.51%	45.98%
DVN	30959	6712	37671	17.82%	21.68%	82.18%
NEE	105152	72173	177325	40.70%	68.64%	59.30%
OXY	57664	20765	78429	26.48%	36.01%	73.52%
PXD	58502	5709	64211	8.89%	9.76%	91.11%
AEP	37788	44660.1	82448.1	54.17%	118.19%	45.83%
PSX	50558	19866	70424	28.21%	39.29%	71.79%
SO	71682	62395	134077	46.54%	87.04%	53.46%
D	33488	48597	82085	59.20%	145.12%	40.80%
EXC	39112	42623	81735	52.15%	108.98%	47.85%
MPC	60320	28565	88885	32.14%	47.36%	67.86%
OKE	39364	12817	52181	24.56%	32.56%	75.44%
XEL	32044	26802	58846	45.55%	83.64%	54.45%
SHEL	221842	84366	306208	27.55%	38.03%	72.45%
PBR	105490	57971	163461	35.46%	54.95%	64.54%
TTE	159490	55969	215459	25.98%	35.09%	74.02%
EQNR	100945	30595	131540	23.26%	30.31%	76.74%
E	53098	33463	86561	38.66%	63.02%	61.34%
CNQ	71480	12155	83635	14.53%	17.00%	85.47%
BP	114537	60699	175236	34.64%	53.00%	65.36%
SU	44079	17004	61083	27.84%	38.58%	72.16%
ENB	67636	79464	147100	54.02%	117.49%	45.98%
NGG	43517	42985	86502	49.69%	98.78%	50.31%

The second data is the beta coefficient (βa) of each company. The data involved here are T (corporate tax rate) and βe (beta coefficient of each company's equity). For T, for convenience, this paper does not calculate it, but directly adopts the Corporate Income Tax Rate in different countries published on the website Trading Economics, such as 21% for T in the United States and 19% for T in the United Kingdom. Since βe is publicly available, this paper directly uses 5Y Monthly Beta of each company. Finally, this paper use the formula $\beta a=\beta e/((1-T*D/V)/(1-D/V))$ to obtain the beta coefficient of each company. The results are shown in Table 3.

The final data is each firm's weighted average cost of capital (WACC), which measures the minimum rate of return acceptable to the firm’s investor. The data in-

volved here are Re (cost of capital for equity) and Rd (cost of capital for bonds). Among them, Re is calculated according to Rm (the average return rate of all stocks in the market) and Rf (the risk-free interest rate). For the calculation of Rf, this paper chooses the interest rate of US Treasury bonds as the reference, because it is the most stable. This paper averages the Adj Close of US Treasury bonds published each month over the five years, and obtains that Rf=2.22%. For the calculation of Rm, this paper uses the data of S&P 500 INDEX, which is also the data of the past five years. This paper chooses Adj Close on 10/1, 2018 as the beginning price, and the Adj Close of 2023/9/1 is taken as the ending price. The formula Rm=(Ending price/Beginning price)^(1/5) − 1 is then used to obtain that Rm=9.84%. Then the paper use the formula Rd=Rf+βe*(Rm-Rf). Theoretically, Rd should be calculated by querying and calculating the YTM of these companies' newly-issued bonds. However, since this is a difficult task and only the bond data of a few companies can be found, so this paper simply sets Rd to 5% for each firm. Finally, this paper uses the formula WACC=Re*E/V+Rd*(1-T)*D/V. The WACC of each company is shown in Table 4.

Table 3. Beta Coefficient

	T	βe	βa
XOM	21%	1.04	0.97
CVX	21%	1.14	1.08
COP	21%	1.29	1.19
ET	21%	1.65	0.91
EPD	21%	1.02	0.74
EOG	21%	1.52	1.46
NRG	21%	1	0.49
DUK	21%	0.46	0.24
DVN	21%	2.33	1.99
NEE	21%	0.54	0.35
OXY	21%	1.72	1.34
PXD	21%	1.42	1.32
AEP	21%	0.5	0.26
PSX	21%	1.33	1.01
SO	21%	0.56	0.33
D	21%	0.52	0.24
EXC	21%	0.65	0.35
MPC	21%	1.56	1.14
OKE	21%	1.67	1.33
XEL	21%	0.45	0.27
SHEL	25.80%	0.62	0.48
PBR	34%	1.1	0.81
TTE	25%	0.87	0.69
EQNR	22%	0.5	0.40
E	24%	1.17	0.79
CNQ	26.50%	1.97	1.75
BP	19%	0.62	0.43
SU	26.50%	1.6	1.25
ENB	26.50%	0.92	0.49
NGG	19%	0.32	0.18

Table 4. WACC

	Rf	Rm	Re	Rd	WACC
XOM	2.22%	9.84%	10.14%	5%	9.61%
CVX	2.22%	9.84%	10.91%	5%	10.47%
COP	2.22%	9.84%	12.05%	5%	11.24%
ET	2.22%	9.84%	14.79%	5%	9.29%
EPD	2.22%	9.84%	9.99%	5%	8.03%
EOG	2.22%	9.84%	13.80%	5%	13.30%
NRG	2.22%	9.84%	9.84%	5%	6.48%
DUK	2.22%	9.84%	5.73%	5%	4.77%
DVN	2.22%	9.84%	19.97%	5%	17.12%
NEE	2.22%	9.84%	6.33%	5%	5.36%
OXY	2.22%	9.84%	15.33%	5%	12.31%
PXD	2.22%	9.84%	13.04%	5%	12.23%
AEP	2.22%	9.84%	6.03%	5%	4.90%
PSX	2.22%	9.84%	12.35%	5%	9.98%
SO	2.22%	9.84%	6.49%	5%	5.31%
D	2.22%	9.84%	6.18%	5%	4.86%
EXC	2.22%	9.84%	7.17%	5%	5.49%
MPC	2.22%	9.84%	14.11%	5%	10.84%
OKE	2.22%	9.84%	14.95%	5%	12.24%
XEL	2.22%	9.84%	5.65%	5%	4.88%
SHEL	2.22%	9.84%	6.94%	5%	6.05%
PBR	2.22%	9.84%	10.60%	5%	8.01%
TTE	2.22%	9.84%	8.85%	5%	7.52%
EQNR	2.22%	9.84%	6.03%	5%	5.53%
E	2.22%	9.84%	11.14%	5%	8.30%
CNQ	2.22%	9.84%	17.23%	5%	15.26%
BP	2.22%	9.84%	6.94%	5%	5.94%
SU	2.22%	9.84%	14.41%	5%	11.42%
ENB	2.22%	9.84%	9.23%	5%	6.23%
NGG	2.22%	9.84%	4.66%	5%	4.36%

3 Data Analysis

According to the preliminary analysis of the data, the American companies ExxonMobil and Chevron and the European company Shell show differences in all three financial data. This paper initially assumed that the differences in data may be due to

the different regions they are located in. Specifically, there are different policies or different types of energy used in different regions. In this paper, these companies are divided into 24 companies in the Americas and 6 companies in Europe. The mean values of D/V of American companies and European companies are respectively 33.02% and 33.30%. The mean values of βa of American companies and European companies are respectively 0.89 and 0.50. The average WACC of American companies and European companies is respectively 9.15% and 6.29%. Judging from the mean values of various data, the differences may indeed be related to the companies' regional differences. However, this paper conducts the variance analysis, and the results are shown in Table 5.

Table 5. Variance Analysis

D/V					
SS	df	MS	F	P-value	F crit
0.0000372	1	0.0000372	0.001284	0.971667	4.195972
0.810706	28	0.028954			
0.810743	29				
βa					
SS	df	MS	F	P-value	F crit
0.73325	1	0.73325	3.263446	0.0816	4.195972
6.2912	28	0.224686			
7.02445	29				
WACC					
SS	df	MS	F	P-value	F crit
0.003947	1	0.003947	3.600558	0.068116	4.195972
0.030691	28	0.001096			
0.034638	29				

According to the results of ANOVA, the F values of the three data are lower than the F crit values. It can be seen that regional differences will not cause significant differences in these three financial data, so the null hypothesis is rejected. The differences between the data of some American energy companies and European energy companies are only caused by the randomness of sampling.

After excluding this reason, this paper hopes to start with the perspective that the business scope of each company is different. Although all the samples in this paper are representative energy companies, the businesses of these companies are not the same. Through query, these companies can be roughly divided into three categories according to their business scope:

(1) The principal business of these companies is the exploration and production of oil and natural gas, or it can be expressed as the integration of oil and gas. Such companies are: XOM, CVX, COP, EOG, DVN, OXY, PXD, PSX, MPC, OKE, SHEL, PBR, TTE, EQNR, E, CNQ, BP, SU.

(2) Their main business is the storage and transportation of oil and natural gas and other energy. Such corporations are: ET, EPD, NEE, AEP, ENB.

(3) Their main business is electricity and other public utilities, and the energy used is probably not mainstream oil or natural gas. Such firms are: NRG, DUK, SO, D, EXC, XEL, NGG.

This paper originally intended to analyze the data of these three types of companies. However, the sample size of the last two types of companies is limited. Therefore, this paper combines the two types of companies. Therefore, the 30 companies are divided into 18 companies whose main business is oil and gas exploration and production (referred to as "The First Type of Companies" in the following) and 12 companies that mainly engaged in other businesses (referred to as "The Second Type of Companies" in the following). Table 6 shows the companies' types.

Table 6. Companies' Types

Type I	XOM, CVX, COP, EOG, DVN, OXY, PXD, PSX, MPC, OKE, SHEL, PBR, TTE, EQNR, E, CNQ, BP, SU
Type II	ET, EPD, NEE, AEP, ENB, NRG, DUK, SO, D, EXC, XEL, NGG

According to the mean values of various data, the mean values of D/V of the first type of companies and the second type of companies are 22.00% and 49.69% respectively; The mean values of βa of the first type of companies and the second type of companies are 1.08 and 0.40 respectively; The mean values of WACC of the first type of companies and the second type of companies are 10.41% and 5.83% respectively. The results of variance analysis are shown in Table 7.

Table 7. Variance Analysis

D/V					
SS	df	MS	F	P-value	F crit
0.552102	1	0.552102	59.76945	2.02E-08	4.195972
0.258641	28	0.009237			
0.810743	29				
βa					
SS	df	MS	F	P-value	F crit
3.281604	1	3.281604	24.54948	0.0000314	4.195972
3.742846	28	0.133673			
7.02445	29				
WACC					
SS	df	MS	F	P-value	F crit
0.015118	1	0.015118	21.68682	0.0000708	4.195972
0.019519	28	0.000697			
0.034638	29				

It can be seen that the first type of companies and the second type of companies have significant differences in these three financial data, so the null hypothesis is accepted. The leverage ratio D/V of energy companies whose main business is oil and gas exploration and production will be lower than that of other companies, and their beta coefficient βa and weighted average cost of capital WACC will be higher than other companies' βa and WACC. It is worth mentioning that the calculation of βa and WACC of a company involves D/V, and the analysis of these two data may be questioned as redundant. In fact, the calculation of these two data also involves βe, and after data analysis, the βe of the first and second type of companies is also significantly different.

At the end of the study, this paper also obtains the data related to the sustainability of each energy company, mainly the ESG score of each company. In fact, for few companies, especially those in Europe, it is difficult to find this score. However, since regional differences usually have no significant impact on the research results, this paper only uses more than 20 companies whose ESG scores can be obtained as samples, hoping to find out whether the ESG scores are correlated with the three data of each company. After simple calculation, it can be found that the correlation coefficients between the ESG score of each company and D/V,βa and WACC are respectively −0.456,0.528 and 0.528. It can be seen that the ESG score of each company has a weak negative correlation with its D/V, a weak positive correlation with its βa, and a weak positive correlation with its WACC.

As for the controversy level of each energy company, this paper has also obtained and analyzed the data, and has finally found that its correlation with the three financial data of each company is very weak.

4 Analysis of the Causes

Based on the results of the data analysis, this paper hopes to explore the reasons for these differences in more depth. Among them, the data of WACC are for reference. This paper mainly analyzes the reasons for the differences in capital structure and beta coefficient of each company.

Firstly, when a firm faces smaller bankruptcy costs, in order to avoid paying taxes to maximize profits, the firm will hold higher debt and its D/V will be higher. On the other hand, companies mainly engaged in oil and gas exploration and production choose lower D/V because they usually face higher bankruptcy costs. In other words, they are reluctant to borrow heavily in order to pursue safety. The higher bankruptcy costs for companies exploring for oil and gas are mainly due to the following reasons: (1) Oil and gas exploration is a high-risk and high-investment activity. The development of oil and gas resources needs to go through multiple stages, including exploration, evaluation, development, etc., and there is a possibility of failure at each stage. Exploration results are often uncertain. Corporations have the potential to cost significant amounts of money and time, but it may not result in the discovery or extraction of sufficient oil and gas resources. This risk can lead to bankruptcy of oil and gas exploration companies. In addition, with the deepening of oil and gas exploration and the advancement of technology, the difficulty and cost of oil and gas exploration are also increasing. Some

complex geological conditions and technical needs may require higher investment and longer time to realize oil and gas exploration. (2) There may be negative environmental impacts during energy exploration and production, such as damage to land, water resources and ecosystems. These environmental problems may result in additional cleanup and restoration costs, along with possible fines or other legal liabilities under environmental regulations. (3) There are various safety risks in the process of energy exploration and production, such as explosion, fire and poisoning. These risks may lead to casualties or property losses and increase the bankruptcy costs of the company. (4) The oil and gas market is subject to global economic and political factors. Changes in the market may lead to fluctuations in oil and gas prices and changes in demand, which may affect the businesses and financial conditions of these companies, leading to their bankruptcy. (5) Oil and gas exploration often involves issues such as national sovereignty, and the political and legal environment of different countries and regions will also have an impact on oil and gas exploration. Some countries have strict restrictions on foreign oil companies' investment and cooperation, and some regions also have strict requirements on environmental protection. These factors may increase the costs and risks of the first type of energy companies and lead to their bankruptcy. The factors mentioned above do not include challenges that are common to all energy companies or all companies, such as the request for advanced financial management. In fact, the second type of energy companies appear to have very normal D/V compared to ordinary companies.

Secondly, if the asset beta coefficient of a company is larger than 1, it indicates that the volatility of its asset price is higher than the average level of the market, which means that their stock price may behave more violently when the market fluctuates, and they are often regarded as high-beta companies. Low beta companies with asset betas less than 1 or even less than 0.5 are relatively stable and their stock prices do not fluctuate as much as the average level of the whole market. In the energy industry, most of the companies engaged in oil and gas exploration and production are high-beta companies, while all the companies engaged in other businesses are low-beta companies in the sample. For the first type of enterprises, the main reasons are as follows: 1. As mentioned above, the oil and gas exploration industry is quite volatile, and the oil and gas price is affected by the global economic situation, political situation, etc. Oil and gas exploration and development also requires a large amount of capital investment. All these factors can impact stock prices. In addition, the government's restrictions and the strengthening of environmental protection may also influence the companies' operation. 2. The oil and gas exploration industry is cyclical and subject to the global economic cycle. During a boom, oil and gas demand increases, and the performances and stock prices of the first type of companies rise accordingly. By contrast, in a recession, when demand for oil and gas decreases, so do the companies' performances and share prices. For the second type of companies, the main reasons are as follows: (1) For enterprises engaged in oil and gas storage and transportation, they are usually responsible for the relatively stable parts of the whole link. The storage and transportation has low volatility, high stability, and relatively low probability of failure. The earnings of these companies are not very related to the volatility of oil and gas prices. Government policies have little impact on these companies, mainly because the

technology and facilities they require are relatively mature. (2) For corporations engaged in utilities such as electricity, in comparison, they provides public services and typically have stable demand and cash flow, with stable expenditure plans for maintaining and upgrading facilities. Although the government will also strictly supervise these enterprises, it will usually take measures to ensure the stable supply and reasonable price of utilities, which will help protect the interests of consumers. Public services are an integral part of people's daily life and production, so the profits of the companies are less affected by the economic cycle. During economic downturns, people still need utilities such as electricity. Of course, these are not the only factors that determine the beta coefficient. For instance, if a company's investments are more global and diversified, its stock price will fluctuate less.

As for why ESG score is correlated with these financial data, it is also comprehensible. The ESG risk score indicates the effort invested by the enterprise in environmental protection and other aspects, which indirectly reflects whether the enterprise is more engaged in oil and gas exploration and production or storage and transportation, or whether the enterprise uses more traditional energy or try more to develop environmentally-friendly new energy. Meanwhile, enterprises with poor ESG performance face more pressure from governments and policies, as well as legal proceedings. It will be easier for a company whose ESG performance is well to get support from the government. Through referring to the introduction of a company, perhaps it seems to belong to the first type or the second type, but the ESG score can be a more realistic reflection of whether it is closer to the first type or the second type, and the result may be the opposite. Of course, there is only a weak correlation between ESG scores and companies' financial data, because ESG is only one factor and its influence is not decisive. In recent years, there have been similar studies in this area, such as a Russian research show that ESG is a factor affecting the economic security of energy enterprises [6].

For some companies, they are in the middle situation, such as Shell. As a company whose main business is oil and gas integration, Shell is a low-beta company, because it has shown some characteristics of the second type of companies. Compared with traditional companies such as ExxonMobil, it can be inferred from the data that Shell is in the stage of transformation, and that is a fact. Shell, a company that is driving the energy transition, has lowered its production forecast and its production will remain negative for some time to come. Shell's focus will gradually shift to renewable energy, through asset sales and other means. In the process of energy transition, on the one hand, Shell hopes that the traditional oil and gas business can provide cash flow; on the other hand, influenced by the corporate strategy, Shell invests more in the new energy field, which leads to the reduction of oil exploration expenditure. Based on the concern that oil and gas won't meet the needs of future energy, Shell believes the world needs more low-carbon energy and has expanded its businesses such as an integrated energy offering for new energy automobiles. Shell has also been positive on environmental protection, announcing a goal of net zero emissions and investing in renewable hydrogen, offshore wind and even solar. In conclusion, Shell's characteristics have come close to those of the second type of companies. A research has indicated that the usage of words such as climate and low-carbon has increased significantly in the reports of

Shell and BP in recent years, although these words may not be fully put into practice [7]. In contrast, traditional energy companies such as ExxonMobil, which have relatively optimistic forecasts of future oil demand, will continue to view oil and gas as their main business for some time to come. ExxonMobil invested relatively little in the energy transition, and firmly implemented an oil-and-gas based model because it believes that fossil energy will continue to grow in the future. ExxonMobil has also been sued for misusing fossil fuels, posing climate change risks and deceiving the public. In fact, although ExxonMobil has also discovered the trend of global warming through its research, it did not put the conclusions into practice, but instead adopted business strategies that contradicted its own research results [8], and tried to deceive the public on the issue of climate change [9]. Through data analysis, a research has found that Exxon Mobil, Chevron and other companies are not active in transformation, while Shell, Total and other companies are more active [10]. In addition, although the conclusions of this paper do not show that the location of energy companies has a significant relationship with their financial data, another study has suggested that American companies (such as ExxonMobil) do fall behind European companies (such as Shell) in ESG and other aspects [11].

There have been many calls for energy companies to be more socially responsible in recent years, but those calls have had little impact on companies such as Exxon, which may not see it as something relevant to them. A research shows that European firms will commit to transformation largely because they concern their self-interest and they assume social responsibility because of internal driving forces [12]. The conclusion of this paper shows that whether a company transforms is related to its own financial situation, such as capital structure and risk coefficient. From this perspective, this paper can be more effective in convincing traditional energy companies because the transition seems to be a good option. Of course, it makes no sense for oil and gas exploration and production companies to transform into oil and gas storage and transportation companies. They should transform to try new energy.

5 Conclusion

This paper researches the financial data of companies in the energy industry and analyzes the factors contributing to the differences in financial data. This paper selects 30 energy companies as samples, calculates their D/V, βa and WACC, and analyzes the reasons for their differences. The companies are divided into those whose main business is oil and gas exploration and production, and those whose main business is oil and gas storage and transportation or public utilities. It is found that whether the company's main business is oil and gas exploration and production is an important factor causing the difference, and it is also found that there is a certain correlation between the company's ESG score and its data. This paper draws the following conclusions: (1) Energy companies engaged in oil and gas exploration and production face higher bankruptcy costs and need to maintain relatively low leverage ratio, while other companies can have normal leverage ratio. (2) Companies engaged in oil and gas exploration and production are usually high-beta companies, which face various risks, so their stock

prices fluctuate greatly; other companies face relatively fewer risks. (3) A company's ESG score indirectly reflects its type, so the score is related to the company's financial data. (4) It can be seen from the financial data that some companies, whose main business is oil and gas exploration and production, may actually have been transforming. In the author's opinion, it is a good choice for traditional energy companies to actively promote transformation and develop new energy. That will be conducive to environmental protection and other social issues and also conducive to the companies' own reduction of bankruptcy costs and fluctuations of stock prices. Of course, this paper also has some shortcomings. For example, it adopts relatively simple methods in data collection and data analysis, and the conclusions drawn may also have limitations. The author hopes to conduct more accurate and in-depth research on the data of the energy industry in the future.

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