

# **The Diversification Discount in the Oil and Gas Industry:**

## **Marathon Corporation Downstream Demerger Case Study**

Nikita Lundvall\*

Filip Nilsson\*\*

### **Abstract**

This paper examines the success and implications of a decision by Marathon Corporation to spin-off its downstream assets from the upstream counterpart in early 2011. It is found that due to recent developments in the oil and gas industry and risk profile differences in the upstream and downstream firm, the demerger has led each firm to unlock hidden shareholder value and specialize to mitigate the effect of a diversification discount. Marathon Oil achieved this through strategic disposal of base assets in favor of increased investments in unconventional US shale plays, mainly Eagle Ford and Bakken, which contain highly lucrative production opportunities as a result of cheap extraction costs and plentiful reserves. Marathon Petroleum on the other hand conducted a share repurchase, dividend increase and plans to IPO a MLP in mid 2012, which has resulted in the combined market cap of the two firms to be USD20 higher during first trading day than the previous Marathon entity. Comparing pre-demerger performance to post-demerger performance, Marathon Oil and Marathon Petroleum perform better relative to index than as an independent company.

**Key Words:** Diversification discount, specialization, bipartite structure, pure-play firms, demerger, spin-off, Marathon Oil, Marathon Petroleum

\* 21962@student.hhs.se

\*\* 22011@student.hhs.se

**Tutor:** Mariassunta Giannetti

## Table of Contents

<b>1.0</b>	<b>Introduction .....</b>	<b>3</b>
1.1	Research Questions.....	4
<b>2.0</b>	<b>Previous Studies and Relevant Literature.....</b>	<b>4</b>
<b>3.0</b>	<b>Methodology .....</b>	<b>7</b>
3.1	Choice of Method.....	7
3.2	Design and Selection.....	8
3.3	Data Description.....	8
3.4	Analysis and Presentation.....	9
3.5	Validity and Limitations .....	9
<b>4.0</b>	<b>Case: Marathon Corporation Downstream Spin-off .....</b>	<b>10</b>
4.1	Recent Oil and Gas Industry Developments .....	10
4.1.1	<i>Tightening Access to Reserves as a Result of Political Constraints and Fiercer Competition .....</i>	<i>10</i>
4.1.2	<i>Cost Containment and Margin Management puts Further Pressure on Firms.....</i>	<i>12</i>
4.1.3	<i>Declining Workforce of Competent Engineers to Take on Tasks of Increasing Technological Difficulty ...</i>	<i>14</i>
4.2	Incentives Relating to the Spin-off .....	14
4.2.1	<i>Greater Transparency for Shareholders and Management.....</i>	<i>15</i>
4.2.2	<i>Improving Ability to Attract and Retain Key Employees.....</i>	<i>15</i>
4.2.3	<i>Optimizing Business and Operational Decision Making.....</i>	<i>16</i>
4.3	Transaction Summary .....	16
<b>5.0</b>	<b>Results .....</b>	<b>17</b>
5.1	Results – Operational, Marathon Oil Corporation (MRO).....	17
5.2	Results – Operational, Marathon Petroleum Corporation (MPC) .....	21
5.3	Results – Financial.....	24
5.3.1	<i>Peer Group and Time Period.....</i>	<i>24</i>
5.3.2	<i>Stock Performance .....</i>	<i>25</i>
5.3.3	<i>Shareholder Value.....</i>	<i>26</i>
5.3.4	<i>Risk.....</i>	<i>27</i>
5.3.5	<i>Valuation Multiples .....</i>	<i>28</i>
5.4	Results- Managerial .....	30
<b>6.0</b>	<b>Analysis.....</b>	<b>31</b>
6.1	Operational.....	31
6.1.1	<i>Upstream Base Assets.....</i>	<i>31</i>
6.1.2	<i>Upstream Growth Assets .....</i>	<i>33</i>
6.1.3	<i>Downstream Refining.....</i>	<i>34</i>
6.1.4	<i>Downstream Retail &amp; Marketing.....</i>	<i>35</i>
6.2	Financial Analysis .....	35
6.2.1	<i>Stock Price .....</i>	<i>36</i>
6.2.2	<i>Risk.....</i>	<i>37</i>
6.2.3	<i>Valuation Multiples .....</i>	<i>38</i>
6.3	Managerial Analysis .....	39
<b>7.0</b>	<b>Conclusions and Implications.....</b>	<b>40</b>
<b>8.0</b>	<b>Bibliography .....</b>	<b>42</b>
<b>10.0</b>	<b>Appendix .....</b>	<b>46</b>

## 1.0 Introduction

The concept of corporate demerging became common in the 1950s USA, approximately 30 years after the first recorded case in the 1920s. A corporate spin-off, as it is often referred to in Europe, is the distribution of the shares of a firm's subsidiary to the shareholders of the firm. It does not result in a delusion of shares, or a transfer of ownership from existing shareholders. Rather, the effect is predominantly visible in that the operations and management of the newly formed firm are separated from the parent. Typically, a demerger provides ways to enrich shareholder value, focus on core business activities or divest company control of assets in preference of divesting them.

Historically, both in the UK and in USA demergers were frequently used to dismantle conglomerates to eliminate negative synergies. As their benefits have become more palpable in the last 20 years, firms tend to demerge for three main reasons according to Kirchmaier (2003). These include improvements in market transparency, narrower scope for operations and more relevant corporate governance talent. A demerger can lead to a more transparent business model as well as transparency for researchers, stockholders and traders, effectively eliminating many barriers of growth from a capital markets perspective. Corporate governance improvements refer to the better alignment of executives and managers with the core value of the business as well as improvements in managerial incentives.

According to Montgomery, Hill, & Moore (2011), the most commonly mentioned reason for a demerger is to unlock shareholder value through organizational improvements. The case is rarely that the sums of two split firms produce the cash flow of the sum of both parts. As mentioned by Hite and Owers (1983):

“If there are no synergies between the parent and the subsidiary, the sum of the post-divestitures' cash flows would equal the combined cash flow had the two units remained as one.”

A demerger can therefore be an excellent option to realize any locked potential that exists within one of the two parts that is neglected by the market simply because the synergies are hidden within the combined entity. This phenomenon of undervaluing diversified companies is more commonly referred to as the diversification discount, pioneered by Campa and Kedia (2002).

The diversification discount has been found within multiple samples, but the question has not been answered if the results are applicable to all industries. The oil industry exemplifies the nature of the diversification discounts existence, due to the differing aspects of the two parts in an oil conglomerate: upstream and downstream. Upstream sector refers to the exploration and production of crude oil and natural gas. It is often abbreviated “E&P” and characterized by projects with high uncertainty and high upside potential. Downstream is often shortened to “R&M”, refining and marketing, relating to refining of crude oil, distribution of crude oil derivatives through retail networks and transportation through pipelines.

When the diversification discount and the related benefits of diversification versus specialization is put in the context of the oil industry, it raises the question if oil conglomerates can be characterized as diversified companies and if they can benefit from specialization. The reason for this is the differing natures of excavating oil and refining it within a conglomerate. This leads on to our two main research questions:

### **1.1 Research Questions**

- 1) Has Marathon managed to reach their goals and unlock shareholder value through its downstream spin-off?
- 2) How has this been accomplished, and because of what?

## **2.0 Previous Studies and Relevant Literature**

The topic of diversification versus specialization and their respective positive as well as negative effects are well documented by previous literature. Campa and Kedia (2002) found that the diversification discount exists in their sample, as firms that chose to diversify have lower value than other firms in the industry that remain focused in a single industry. However, they argue that this alone does not provide evidence to the fact that diversification destroys value, as the act of diversifying may be a reaction to declining growth in the first industry. It then becomes a natural step in the search for new growth possibilities for the firm in question.

Lang and Stulz (1994), Berger and Ofek (1995) and Servaes (1996) all confirm the fact that diversified firms trade at a discount when compared to focused firms in the same industry. According to Campa and Kedia (2002), this result is seemingly robust over both time periods

and countries. Nonetheless, the underlying characteristics of the firms in question cannot be ignored, as it may lead to falsely attributing the discount entirely to the choice of diversification. Past performance and the effect that performance has on the choice to diversify needs to be considered when making an analysis. As an example, a firm that is performing poorly might choose to diversify to search for new growth opportunities and sources of revenue.

Rotemberg and Saloner (1994) as well as Aron (1988) pointed to the fact that there is a difficulty of finding the optimal incentivized compensation for the managers of diversified firms, which also generates costs. Allocating capital between divisions in diversified firms can also be a source of additional costs, according to Stulz (1990), Lamont (1997) and Scharfstein (1998).

The effect of which takes place once a firm demerges or spins off one of its divisions points to the same thing, that there are significant costs related to diversification. Is there empirical evidence to prove that the diversification discount disappears and shareholder value increases in recent literature?

Miles and Rosenfeld (1983) wrote the first empirical paper with a significant number of observations on this subject, studying the effects 55 demergers, between 1963 and 1980, had on the cumulative average adjusted return. They found that, statistically significant at the 1% level, during the period between 120 trading days before and 60 trading days after the demerger was announced, the cumulative average adjusted return was +22%. More importantly, the closing price was on average +3,3% after two days of trading, which indicates that the market assesses demergers positively on average. More recently, a study by Cusatis, Miles and Woolridge (1993) was done on the performance of 146 demergers that had taken place between 1965 and 1988. This study differs from Miles and Rosenfeld (1983), as it omits announcement effects and observes the returns during a longer period of time, ranging from six months to three years after the demerger taking place. During this time, both the spin-off and the larger corporation generated positive abnormal returns up to three years after the date the spin-off was announced. Kirchmaiers (2002) study, "The Performance effects of European Demergers" analyzed 48 demergers between 1989 and 1999. Significant announcement effects were found in the sample, in addition to a significant positive shareholder value creation for the spin-off, but not for the parent company.

Wernerfelt and Montgomery (1988) as well as Bodnar, Tang and Weintrop (1997) suggest that there are gains to diversification which are founded on the existence of firm-specific assets which can be used in other markets. Campa and Kedia (2002) state that recent literature has been modeling diversification decisions as value-increasing strategies for firms, using Perold (2005) and Maksimovic and Phillips (2002) as a foundation for the argument. Perold (2005) showed that diversification could reduce the deadweight costs of capital, which enables firms to operate on a larger scale through a model based on the diversification decision taken by banks and other financial intermediaries. The model of Maksimovic and Phillips (2002) depends on a firm doing a number of optimal choices of segments to operate in with respect to their comparative advantage in those segments. In this study, it is shown empirically that conglomerates manage to allocate resources optimally, due to relative efficiency of separate divisions.

The research mentioned in the paragraph above points to the fact that the advantages and disadvantages of diversification seem to be related to firm-specific characteristics in place before the demerger. Our focus is to determine the success of this demerger and the impact it has had on the stock price in relation to equivalent peers, with emphasis on the underlying reasons to the net impact of the demerger. The Marathon Oil demerger is a separation of the upstream business with high profit margins and high risk from a continuous, low margin downstream business. These characteristics of up- and downstream businesses within large oil conglomerates are important to take into consideration, as they make the foundation of the decision to demerge and determine the future success of that decision.

We are not the first to observe and study the decision of demerging a large oil conglomerate as the subject has been placed in the public eye by various media outlets in the wake of Marathon, and more recently ConocoPhillips' decisions to spin-off its downstream business. John Grapper of the Financial Times (2011) speculates that such transactions will be a continuing trend due to the developments in the upstream sector. These speculations are bound to increase, especially if the mergers and demergers of the Supermajors<sup>1</sup> prove to be cyclical.

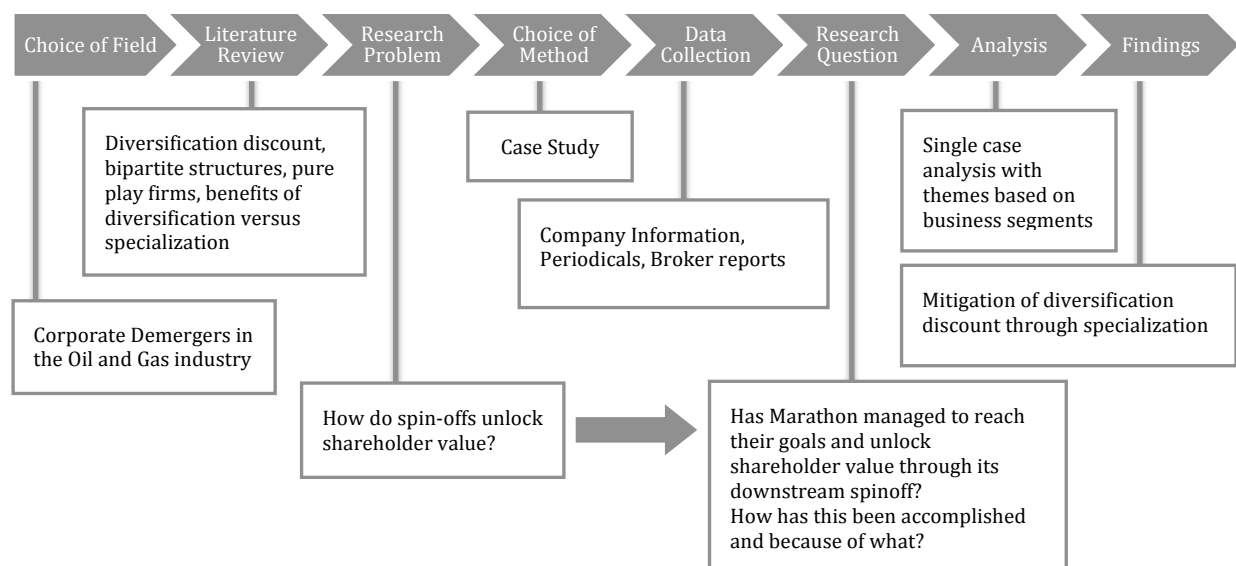
---

<sup>1</sup> Supermajors/Integrated/Major Oil are terms referring to the large integrated hydrocarbon players active in the entire extraction and retailing process. Examples include BP, Chevron, Gazprom and Petrobras

Kahn and Winton (2004) examined the situation of bipartite and unitary structures among banks and financial institutions, two separate subsidiaries offering loans of the same type but with differing risks. With a bipartite structure, the financial institutions shields safer loans from riskier loans, and thus reduces the chance of risk shifting. Thus, bipartite structures become more likely to dominate unitary structures as expected profits from the efficient loan mix are lower. If applicable to the oil business, it would establish that a demerger of two separate entities with differing risks is a value-creating corporate decision.

Future literature might choose to delve deeper into the above-mentioned aspect of cyclical mergers and demergers, exploring if there is actually further value to be unlocked for the shareholders. The other alternative is if it happens to be an investment banking trend, with conglomerates merging and demerging in cycles to create fees and secure future profitability for the M&A divisions, without adding any further value. Further researching the ongoing trend with demerging american oil corporations in general should also prove interesting, as more time passes and more data becomes available to gather and analyze.

### 3.0 Methodology



#### 3.1 Choice of Method

The basis our thesis is to study and explain the success of the Marathon spin-off, in the context of the recent factors that has been affecting the oil industry. The research questions only went through minor lingual changes while maintaining the same focus. We designed the research questions in a “how and why”-way. To study the questions and being able to answer

them in a relevant context, we found that a case study would be the most satisfactory of the different qualitative methods available to us. The study has been used to provide description and to generate theory.

### **3.2 Design and Selection**

The Marathon spin-off occurred in July of 2011 and ConocoPhillips followed suit with their spin-off in the beginning of May 2012. Had the ConocoPhillips spin-off been completed earlier, a multiple case design would have been considered for our study. In our opinion, a study with multiple cases would have been preferred if possible, since it would have enabled us to extend between the two individual cases. There are however advantages to using a single case, as it according to Dyer & Wilkins (1991) enables the study to carefully investigate a setting and to accomplish the objectives of a plausible case study. Eisenhardt (1991) however, argues that the usage of multiple studies allows for the creation of a more comprehensive theoretical image.

We chose the Marathon case because of the time frame; the spin-off has existed long enough for us to be able to gather the data required to make an analysis sufficient to answer a research question. The ConocoPhillips spin-off, Phillips 66, has not existed long enough to perform an adequate analysis on, thus making Marathon Oil the only viable candidate for a study focused on recent-time demergers in the oil industry. By going with a single case we chose depth over width.

### **3.3 Data Description**

Choosing data for a case study can be done from multiple different types of sources. In our study we have used investment banking presentations, public company reports, articles in newspapers, databases, economic journals and broker reports. The different types of sources serve as complements to each other, according to Yin (1994). Realizing this, we have tried to utilize as many types of sources as we possibly can, to gain breadth in our study. Access to the Thomson ONE database and Bloomberg terminal was granted at our workplaces, all other information is publically available on the Internet and in select libraries. Choosing to focus on each other's strength and chosen field in workplace, the research was divided up accordingly. As previously stated, one of us has experience in an Oil and Gas team in Investment Banking and was thus chosen to research operational and managerial data during the data collection and research phase.



### **3.4 Analysis and Presentation**

An extensive industry overview was compiled, consisting of recent developments explaining the current climate. Then, all details of the Marathon demerger were written down descriptively, to give us a comprehensive overview of the case before beginning to collect data. After the data was collected, it was organized into three different segments, developed from the goals Marathon Oil set up for the spin-off; Operational, Financial and Managerial. The method and reasoning used when creating peer-groups and choosing financial ratios to portray the situation is explained in the corresponding section of results. We chose to present it this way to give the study better flow throughout and to prevent readers from having to backtrack to understand our reasoning.

The analysis was set up with the goals Marathon set up before the demerger in mind, but in collaboration with themes derived from the previous literature section, to help get us on the right track of answering our research questions and staying on topic.

### **3.5 Validity and Limitations**

Since the majority of our used sources come straight from official or unofficial filings from Marathon they have a high degree of objectivity. Unfortunately due to the geographic location of Marathon we were unable to schedule any interviews making the information static but accurate. The time passed since the transaction is not enough to draw any substantial conclusions on the aftermath of the transaction in terms of share accretion, limiting our conclusion to observable actions taken by each firm and what implications these will have for future growth and profitability.

Optimally, we would have preferred a longer time span passed between the event date and the date of our thesis, to further validate our findings. Larger peer groups for both up- and downstream indexes would also have been favored, but finding similar and comparable peers in the US market proved harder than expected. Regarding the managerial analysis, we would ideally have used more internal documents and have had the possibility to perform interviews with managers regarding incentives and changes in the organisation due to the demerger.

## **4.0 Case: Marathon Corporation Downstream Spin-off**

### **4.1 Recent Oil and Gas Industry Developments**

In order to understand the underlying reasoning for a spin-off we must first examine and evaluate the upstream and downstream environments around the time of the announcement. Exploration has become much more costly and risky compared to a few years ago, and refining margins are in a free-fall resulting in a reduction of processing capacity for supermajors. In this section we aim to explain how the upstream and downstream environments progressed in 2011 by looking at several of the risk factors dominating major decisions of the players in the industry.

#### **4.1.1 Tightening Access to Reserves as a Result of Political Constraints and Fiercer Competition**

In 4Q10, the International Energy Agency (IEA) estimated a global oil demand of 87.7million barrels per day (mb/d), the highest level ever recorded. This is mainly due to a policy-governed surge of Chinese gasoline use, followed by economic recovery and a record high demand for heating oil. As a result, obtaining a field capable of delivering a steady stream of oil was essential for upstream players in order to harvest the market opportunities available in late 2011.

Today, a majority of large-scale reserves are mature fields with rapidly declining production and increasing extraction costs. In developing countries such as Brazil, the amount of undeveloped prospects is significantly larger than in OCED countries. This paints a dim future for upstream players, as ownership provisions are turning in favor of local governments. Due to policy and laws, foreign players are sometimes not even allowed to participate on an equity basis, and may only serve as operators of the rigs in question.

Events in the Gulf of Mexico, Middle East and North Africa served as a remainder for Supermajors that areas previously open to exploration and prospective drilling could soon face a reversal. Access to reserves is also tightening as a result of stricter environmental regulations in previously open locations, severely delaying or reducing the number of extraction projects. As the number of conventional extraction sites is on decline, firms are scattering to win contracts in locations still open for foreign oil companies, while the number of fields that are being drilled and processed is not nearly as high as the rapidly decreasing discovery of new prospects. For North American players it has become more lucrative to

invest capital in domestic markets as a high oil price along with close proximity to refineries has finally justified the extraction of hydrocarbons from unconventional resources. Unconventional Resources is a term referring to oil reserves extracted in ways previously unfeasible, impossible due to technological constraints or deemed to dangerous until recent developments. According to Time Magazine (2012), the main ones in the USA are:

### **Tight Oil**

Predominantly found in Texas, North Dakota and Montana, these reserves are found in reservoirs of low porosity, and contain light, sweet crude that is relatively easy to process compared to heavier oil types such as Arabic Crude or WTI. Extraction of such reserves requires hydraulic fracturing (hydrofracking) the process of using high-pressure pumps to force cracks in the rock formation using water and silicone. Reserves are estimated to be at 300MM<sup>2</sup> barrels globally, and cost approximately USD50/barrel to extract.

### **Oil Shale**

Oil shale reserves are located principally in Utah, Wyoming, Colorado, Michigan, Kentucky and Tennessee. The shale is made of solid bituminous material called kerogen, which is mined and heated to a high temperature to separate the hydrocarbons from the shale. The process is painstakingly difficult and expensive since it requires large areas of land and the use of complex and expensive machinery. Estimates indicate a global supply of 800MM barrels with a cost of extraction of USD100/barrel.

### **Oil Sands**

Oil sands are abundant in a dense form of heavy petroleum called bitumen that is extracted in a similar fashion to oil shale. Reserves are located in Alberta, Canada with estimates of 169MM barrels at a cost of extraction of USD50-75/barrel.

Following the unfulfilled prediction of Russia becoming the world's largest exporter, the USA has stepped in with its newfound unconventional gas fields carrying enough hydrocarbons to power the nation for 100 years, according to Deloitte's Oil and Gas Industry Overview (2010). They further claim that since 2006, the annual oil shale gas production has increased from 0.75Tcf to 4.6Tcf<sup>3</sup> and just in 2010 daily production increased by almost 60%,

---

<sup>2</sup> MM refers to million

<sup>3</sup> Trillion cubic feet

highlighting the bright future of shale gas. The advantages of being a shale gas producer in the USA is that internationally, despite plentiful resources, shale gas extraction has not been developed to the same extent as in North America. This provides opportunities for American players to tap in on international resources both as operators and as contractors. Disadvantages of shale gas such as the occasional need for hydrofracking are currently overlooked by the vast amount of jobs the industry has provided, as well as allowing the US to combat an OPEC oil monopoly.

Just as the shale gas has changed the face of global hydrocarbon extraction, tight oil has since 2008 been a lucrative opportunity for oil companies due to the plethora of the resource and a high oil price. Looking a few years back, a vast majority of wells were drilled horizontally, whereas now a growing trend, and necessity is to drill horizontal wells. These are more costly, riskier and more prone to failure from collapse. In 2008 it finally became profitable to engage in these risky projects, which opened up a new playing field for American players, where the resource is the most plentiful. Recent estimates by the US Energy Information Administration suggest that tight oil will increase the US oil output by 25% over the next 8 years.

Looking ahead, Supermajors and other upstream firms will need to be much more flexible in how and where they pursue prospects. The risks will be significantly higher, but finding a major field will hopefully outweigh these. Unconventional sources include LNG, US shale gas, Canadian oil sands and coal-bed methane and have the potential to offset production from declining major fields. In the US the focus will be on shale gas and development of hydraulic fracturing to retrieve such resources. On the other hand, drillers will also have to evaluate conventional reserves in unconventional locations including Kurdistan, Gulf of Mexico and Nigeria. In order to take advantage of this dynamic environment that the oil industry is currently in, firms must be adaptable enough to pursue risky prospects, sometimes with no reward.

#### **4.1.2 Cost Containment and Margin Management puts Further Pressure on Firms**

As mature fields are becoming more depleted, companies need to resort to more expensive and advanced methods for oil extraction. Methods previously deemed too expensive, such as shale gas drilling or hydraulic fracturing are now widely applied as the price for oil correctly reflects the increasingly advanced methods of extraction. Ultra-deepwater and arctic

extractions are just some examples of how firms have to push technological barriers in search of new reserves. Safety and environmental reporting regulations are putting additional cost burdens on firms, as well as the costs for raw materials such as steel, which is essential for drilling.

On the downstream side many refineries have been struggling to retain healthy margins as more complexity is required to process the crude, and more cash needed to purchase it. The availability of easily processed and refined light-sweet crude severely decreased due to the unrest in Libya, while heavy-sour crude alternatives from the North Sea, Russia and Africa were growing. This has resulted in a significantly higher proportion of heavy crudes in refineries, increasing the cost and complexity of the process. At the Deloitte Oil and Gas Conference (2010), speakers argued that although the golden age of refining is over. This has left room for low-cost producers as well as niched large-scale players to monopolize on the situation. The future of downstream lies, according to speakers at this conference, in flexibility and being able to adjust capacity, product and strategy to market demands.

Furthermore, costs to build new refineries and petrochemical plants are rapidly increasing as a result of higher oil prices and a weakening US dollar, putting more pressure on firms to produce the required capital expenditure. Large, complex refineries with integrated petrochemical divisions are steadily becoming the industry standard according to Oilweek (2011).

Demand for gasoline in the US is rapidly decreasing as a result of a sluggish economy and higher standards for environmentally friendly fuels. This, together with a rapid increase in US refining capacity over the last few years has contributed to the reduction of margins for all US refineries, according to Lynn Elsenhans, the CEO of Sunoco (Deloitte, 2010). Although demand for gasoline is decreasing, the demand for diesel has increased over the last couple of years, giving refiners the opportunity to adjust their focus and approach a strategy focusing on large-scale diesel production for export and domestic use. The problem with the aforementioned strategy is the lack of flexibility in a completed refinery.

On a global basis, according to OPEC (2011), 90% of the growth in oil demand will be accounted for by the transportation sector by 2015. This will be supported mainly by a surge in vehicles per capita from Asia, a claim supported by research from the US Department of

Energy laboratory (2011). As a result, 6.8MMbpd of refining capacity is expected by 2015, with a majority rooted in Asia. While there is plentiful capacity for heavy products, middle and light distillates such as diesel will experience an increase in output capacity following the additions of such facilities.

Larger players including ConocoPhillips (CON, a firm which pursued a demerger solution similar to that of Marathon in July 2011) have promised shareholders to monetize non-core assets to free capital for future E&P endeavors, as well as to reduce debt and increase solidity to better adapt to the nature of the new upstream environment. More specifically, ConocoPhillips sold interests in Russian LUKOIL and other non-core assets for a total of USD17.8Bn to prepare the firm for riskier E&P project.

#### **4.1.3 Declining Workforce of Competent Engineers to Take on Tasks of Increasing Technological Difficulty**

In their annual outlook for 2011, OPEC outlines the issue of human resources as a key factor to influence the next few years of oil and gas production. As the work becomes increasingly more difficult in terms of locating fields, extracting reserves and refining them the workforce is on a steady decline. OPEC (2011) claims that the origin of this shortfall can be traced to the 1980s depression during which many competent engineers left their fields of study to pursue less qualified jobs, never to return. Furthermore, universities were reducing the sizes of their energy-engineering majors as the industry was in no shortage of applicants. A key factor will be to hire and retain qualified personnel in developing countries, where the scarcity is at its height.

According to the Ernst & Young Oil and Gas Business Risk Report (2011), the industry suffers from an aging workforce with 45% of workers being 45 years of age or above. As a large portion of these workers will retire in the next five to ten years it is unclear if the current supply is capable of supporting such a drop in numbers. Given the large capital required to train an engineer to the high level of expertise modern oil extraction and refining requires, companies will suffer a severe workforce deficit if action is not taken urgently.

#### **4.2 Incentives Relating to the Spin-off**

In their spin-off presentation to shareholders, Marathon outlines three anticipated benefits with which they rationalize the decision. These reasons are “superior transparency,” “strengthened ability to attract and retain talent,” and “enhanced flexibility to pursue tailored

strategies.” Our analysis will focus on understanding the reasoning behind the transaction, how and why the above-mentioned objectives have been accomplished as well as if the transaction has generated intrinsic shareholder value in relation to the diversification discount.

#### **4.2.1 Greater Transparency for Shareholders and Management**

When comparing the large integrated firms to pure plays<sup>4</sup> there is significantly more external transparency in the pure plays since company management is encouraged to pursue a more aggressive strategy in one direction rather than having to cater to both up and downstream segments. This has resulted in pure plays trading at a premium to integrated ones as a result of a clearer focus on core activities and because shareholders can clearly follow the strategy and thought processes. The spin-off will encourage investors to appreciate the different natures of each business. Upstream E&P is capital intensive throughout the entire business cycle, whereas downstream firms are only capital intensive in the deployment of new refineries or pipelines, after which they become cheap to operate with the bulk of costs coming from material purchasing.

Pricing of each firm's securities will likely suffer less fluctuation because of unforeseen business activities, and analysts' recommendations should be more consistent with future earnings. Furthermore, more accurate benchmarking to peers will better reflect the true expected returns on each separate company and better allow shareholders to construct a portfolio that suits their risk aversion. Divestiture will also allow Marathon to more selectively pursue acquisitions in both up and downstream segments to more easily allow the spotting of relevant assets. The financial balance of both MPC and MRO will no longer have to be regarded prior to evaluating capital expenditure capacity for a purchase, and each firm can now better allocate capital to achieve growth.

#### **4.2.2 Improving Ability to Attract and Retain Key Employees**

Workforce shortage will be a major issue for global oil and gas players in the next few years. Since the two businesses require very different skillsets from their managers, a separation of segments will better attract employees with the appropriate skillsets. Furthermore, managerial compensation through equity is better aligned with the performance of each separate business, thus improving long term incentives.

---

<sup>4</sup> Within the oil and gas sector, a firm which has a single business focus such as exploration or refining

### **4.2.3 Optimizing Business and Operational Decision Making**

Up- and downstream segments in the hydrocarbon industry have different dynamics surrounding them and thus require, in many cases, contrasting strategies. A spin-off will allow each management team to better focus on the goals of their division while taking into account the financial, operational and strategic risks and limitations not for the whole business, but only for their segment. Furthermore both companies will become better at prioritizing support for various strategies as well as allocating capital. As upstream E&P is moving towards the more unconventional side, with projects of high-risk-high-reward nature, the downstream segment is moving towards high capex-low-margins clearly.

An example given in the demerger prospectus is that of the Michigan refinery which requires “significant deployment of capital” to improve and sustain. Naturally, investing capital in this project will greatly help the company’s downstream potential, while crippling the cash reserves available for upstream E&P activities. As segregated firms there will no longer be a need to compete for resources and business strategies.

### **4.3 Transaction Summary**

The following information is taken from the FCC filing made by Marathon Oil (2011) in conjunction with the announcement.

The distributing company, Marathon Oil (MRO), allocates 356 million shares of the distributed company Marathon Petroleum Corporation (MPC), making it an independent and publicly traded company. Each holder of a Marathon Oil common stock will receive one share in the newly created company per two shares of Marathon Oil. The total number of shares outstanding will therefore be 356MM for the newly formed company Marathon Petroleum, and 712MM for Marathon Oil.

While the announcement was made in early 2011, the date of filing was June 6<sup>th</sup>, record date June 27<sup>th</sup> and distribution date June 30<sup>th</sup> 2011. The taxation costs incurred by the transaction will be split between the two firms. The distribution itself was however deemed as tax-free by the IRS. In conjunction with the announcement, MPC has entered a revolving credit facility with several banks to satisfy working capital needs following the separation to a sum of USD3.425Bn, with a clause to increase by USD500Mn to a total of USD3.925Bn. Furthermore, a cash distribution of USD1.4Bn is granted to Marathon Oil, as well as the repayment of USD52Mn of debt.



Gary R. Heminger will take on the position as President and CEO for MPC, whereas Clarence P. Cazalot will be installed as Chairman, President and CEO of MOC. The firms will maintain a dividend equal to USD0.6 (710MM shares) for MOC and USD0.8 (356MM shares) for MPC.

## **5.0 Results**

### **5.1 Results – Operational, Marathon Oil Corporation (MRO)**

Following the spin-off, MRO is the remaining part of the previous Marathon Corporation. The firm focuses on adding profitable and sustainable production of oil and gas through exploration and extraction, which it then ships to refineries mainly in North America, Africa and Europe. Its assets are divided into two categories, base assets referring to stable cash generating assets and growth assets referring to unconventional exploration assets that are undeveloped. Exploration is rarely included in the valuation of a pure play E&P firm, but can often indicate what the future of the firm will look like in terms of location of production as well as any unrealized upside potential, which is why we investigate future plans despite their speculative nature.

In late 2010, MRO conducted E&P activities in the USA, Angola, Canada, Equatorial Guinea, Indonesia, Libya, Norway, Poland, Iraq and the United Kingdom according to the company overview (2011). Net liquid hydrocarbon extraction averaged just above 245mbpd while gas extraction averaged at 878 million cubic feet per day (roughly 156.4mbpd) according to Marathon Oil (2011). In 2010, the company actively pursued development of new oilfields by drilling 77 exploratory wells in the US, of which 73 (94%) contained commercial amounts of hydrocarbons- a substantial success rate. Internationally, only 7 out of 10 drilled wells were further developed.

The base assets are found in Africa, the North Sea and Gulf of Mexico. In Africa Marathon holds a 63% operated working interest in offshore Equatorial Guinea, as well as a 53% interest in an LNG production facility. A total of 31% of worldwide production comes from Equatorial Guinea and 32% from the North Sea. These are classified as stable base assets meaning although they provide a steady cash flow stream the upside potential to these sites is often reflected in the high licensing cost of each field. Mostly steady operational growth can

be achieved, in contrast to the relatively unexplored upside potential of unconventional US resources according to the Marathon Oil Factbook (2012). In April 2012 MRO announced the sale of all Alaskan base assets to Hillcorp, the firm from which it purchased Eagle Ford acreage.

Marathon Oil is a major player in North American unconventional resources located in Alaska, Oklahoma, Texas, Colorado and Wyoming. In mid 2011, MRO acquired over 285,000 net acres of land in the lucrative Eagle Ford play for a total of USD3.5Bn, further adding over 20,000 acres in early 2012. Following the move, management has stated that the play will be a main focus for future growth and investment. MRO is expected to utilize horizontal drilling and hydrofracturing in the extraction process according to The Eagle Ford Shale website (2012). The firm stated in its 2012 outlook that it expects Eagle Ford to be one of the key plays worldwide which is why its capital expenditure program is steadily increasing in this area.

		2011				2012
		Q1	Q2	Q3	Q4	Q1
<i>Net Income</i>		<i>996.0</i>	<i>996.0</i>	<i>405.0</i>	<i>549.0</i>	<i>455.0</i>
Adjustment*		631.0	689.0	421.0	552.0	631.0
E&P Earnings	USD	668.0	601.0	330.0	558.0	477.0
Oil Sands Earnings		32.0	69.0	92.0	63.0	41.0
Integrated Gas Earnings		60.0	43.0	55.0	20.0	4.0
<b>Total Upstream PTP</b>		<b>760.0</b>	<b>713.0</b>	<b>477.0</b>	<b>641.0</b>	<b>522.0</b>
Capex	USDMM	824.0	824.0	989.0	762.0	1,095.0
Production	MBOED	398.0	340.0	343.0	378.0	406.0

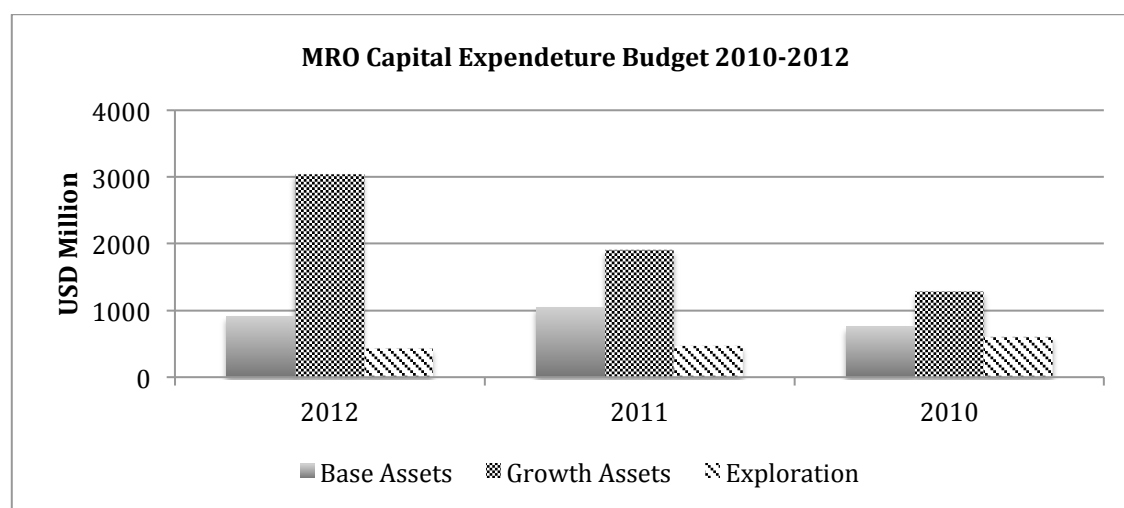
*Table 1. MRO financial and operational overview.*

*\*adjusted for continuing operations*

In 2012, Marathon announced that a staggering USD3.0Bn of the USD4.8Bn budget is allocated to growth assets, suggesting that the firm is back on track to achieving the projected 5-7% increase in compounded production growth by 2016. Furthermore, a spending of USD3.0Bn trumps both the 2010 and 2011 exploration budgets of USD1.8Bn and

USD1.9Bn each. The firm then went on to further niche itself as a North American shale player by announcing in 2011 that 50% of the planned E&P capex would be spent on just three sites (Bakken, Eagle Ford and Woodford.) In 2012, this number grew to USD2.7Bn, still focusing on these three sites. In Eagle Ford alone, the firm plans the establishment of 17 rigs through 170 test wells and the addition of two more hydrofracking crews.

Contrary to the tremendous increase in the growth assets budget, the firm's exploration budget remains largely unchanged since 2011, decreasing in 2012 to USD430MM from USD465MM. For an overview of the capital expenditure budget in 2010-2012, please see the next page.



Other growth resources' include the Bakken Shale, DJ Basin and Anadarko Woodford, each with 2P<sup>5</sup> net resources of 350/60/300MMBOE<sup>6</sup>, adding to the existing 900MMBOE in Eagle Ford. This can be compared to the most plentiful base asset in Equatorial Guinea that has a 112MMBOE 1P<sup>7</sup> reserves. The firm forecasts that Eagle Ford production alone will rise from 15KBPD<sup>8</sup> to 90KBPD, accounting for 73% of production growth until 2015 according to Credit Suisse (2012). Furthermore, MRO stated that the firm will refrain from further investment in gas prospects until the outlook for prices improves, which explains the interest in these particular shales as over 80% of reserves is liquid.

<sup>5</sup> P50 net resource is a measurement of certainty in a reservoir. P50 is defined as probable resources that are 50% likely to be extracted using today's technology, incorporating factors such as governmental consent and oil price

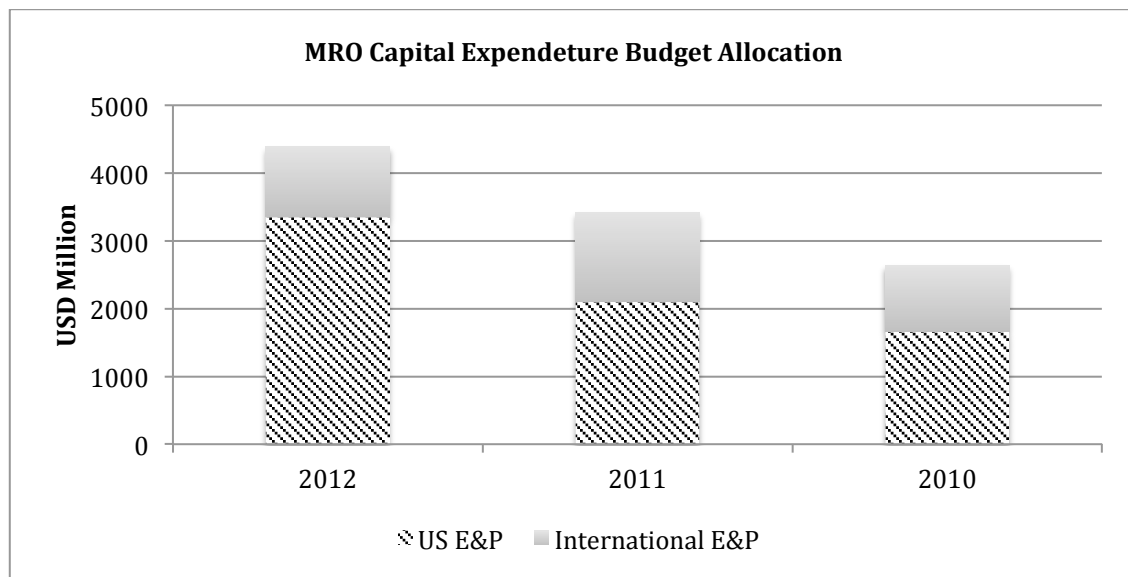
<sup>6</sup> Barrels of oil equivalent, a measurement of hydrocarbons in which both oil and gas is incorporated

<sup>7</sup> 1P reserves have a 90% certainty of successful extraction

<sup>8</sup> Thousand barrels per day

The graph below shows the allocation of capital relating to exploration and production worldwide. The high preliminary 2012 budget further indicates MRO's plans to focus their North American shale business as the core business of the organization. The unchanged international E&P is meant to cover operational expenses and no major license acquisitions are planned outside the US in the near future.

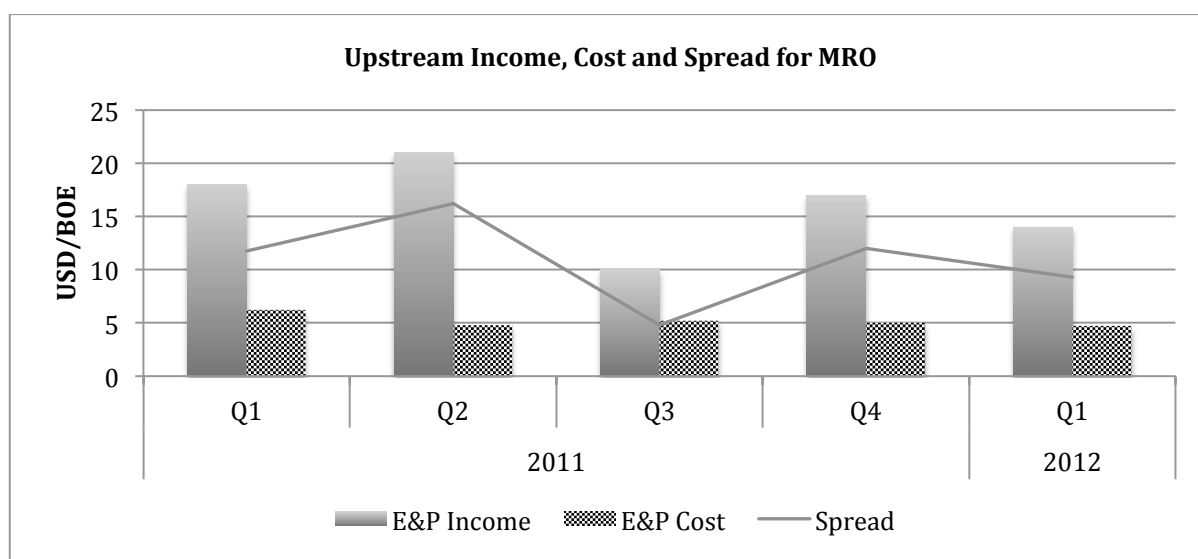
In 2011 the budget for base asset spending was USB1.3Bn compared to USD900MM in 2012. The focus is to maintain a competitive cost structure for all assets, underlining the importance for competitive margins in the 2012 oil and gas industry.



During the UBS Global Oil and Gas Conference in May 2011, Marathon Oil management outlined its goals for base assets as “[...] retain safe and reliable operations (and) constantly seek to reduce costs and optimize (the) portfolio”. These generated on average 66% liquids at a rate of 380MBOE in early 2011. Already in mid 2011 during the Morgan Stanley Oil and Gas conference, the firm reported third highest net income/boe out of its North American peer group. An income of USD21/BOE compared to USD18/BOE in 1Q11 and USD14/BOE 4Q10 was reported.

At the same Morgan Stanley Conference, Marathon outlined a new five-year plan for the base assets in the US Oil Shale region. The Eagle Ford, Bakken and Woodford were only producing 30MBOEPD as of 2010, but through a rigorous capital expenditure scheme of

USD2.5-3.5Bn per year Marathon aims to achieve a 40%+ CAGR on production, with a target of 165MBOEPD by 2016.



## 5.2 Results – Operational, Marathon Petroleum Corporation (MPC)

The intention of Marathon management pre spin-off was for Marathon Petroleum to become the leading independent US refiner through its integrated six-plant network and one of the largest wholesale networks in the USA. However, not much has changed in the performance of Marathon during the last year. Compared to May 2011, the number of refineries is still 6, the Nelson Complexity Index<sup>9</sup> decreased by 0.1, average crude capacity of refineries increased from 186MBPD to 199MBPD and total average crude capacity increased from 1,114MBPD to 1,193MBPD according to Marathon Oil (2012) at the ISI Bermuda Conference.

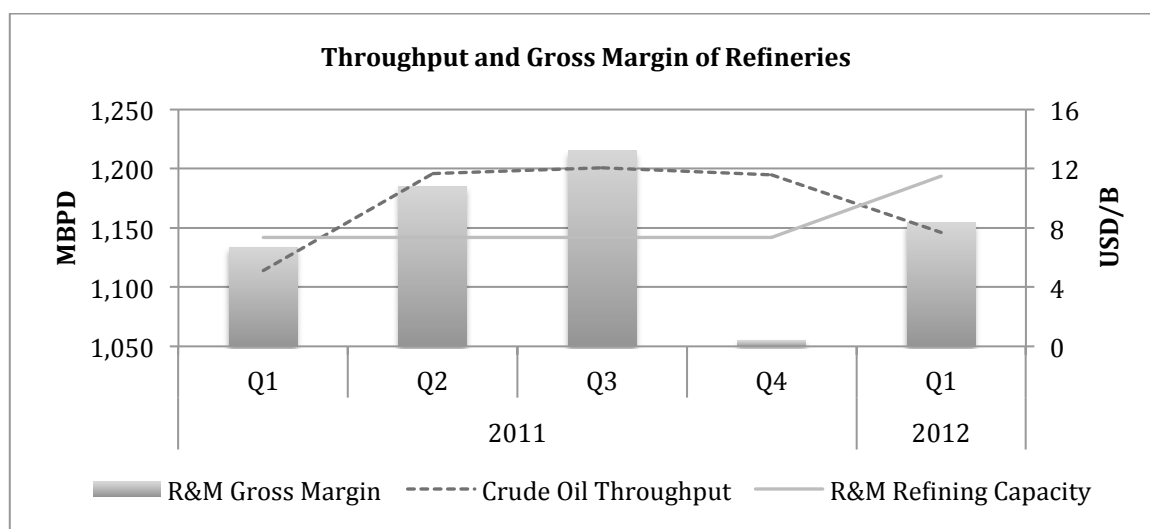
The largest refinery in Garyville, LO has a refining capacity of 464mbpd, while the Cattlesburg and Robinson refineries peak at 212/206mbpd. The other refineries in Michigan, Ohio and Texas account for the remaining 260mbpd. The major output of Marathon refineries is gasoline and other distillates, accounting for 726+409mbpd of the total 1,356mbpd product yields.

<sup>9</sup> The NCI is a measurement of how complex a refinery's processing capacity is. A plant with a high NCI is capable of processing many different types of crudes (sweet/sour)

		2011				2012
		Q1	Q2	Q3	Q4	Q1
<i>Net Income</i>		529.0	802.0	1,133.0	(75.0)	596.0
R&M Income		802.0	1,260.0	1,711.0	(182.0)	943.0
Speedway Income	USD	33.0	80.0	85.0	73.0	50.0
Midstream Income		51.0	54.0	56.0	38.0	42.0
Other Items		(67.0)	(69.0)	(93.0)	(87.0)	(79.0)
<b>Total Downstream</b>						
<b>PTP</b>		<b>819.0</b>	<b>1,325.0</b>	<b>1,759.0</b>	<b>(158.0)</b>	<b>956.0</b>

Table 2. Marathon Petroleum Segment Earnings 2011-2012YTD.

In the table above we can see that downstream profitability has undergone high volatility since the firm began reporting segmented earnings in 2011. The first MPC quarter report came out in 2Q11, boasting a net income of USD802MM, up from the previous quarter by 50%. The refining capacity is also in line with that of previous years. An upgrade of the Detroit Heavy Oil refinery (USD1.2Bn) has added some capacity but no substantial amount. The refining margin of almost 0% during Q4 is a reminder of the stressful situation most refiners find themselves in to optimize margins in times of acute cost containment precautions.



Spread between solid and dotted line shows capacity utilization. When the dotted line lies above the solid there is a capacity surplus i.e. capacity > 100%.

Looking at the two charts above we can see that MPC's performance is largely in line with that of 1Q11. However, a USD850MM share repurchase program, which commenced in 1Q12, is also reflected in the result for the previous quarter. A total of USD2Bn is to be

repurchased from stockowners over two years, starting with the initial sum in 1Q12. Morgan Stanley estimated in 2012 that the share repurchase could have USD11 uplift per share granting a benefit to investors according to Marathon Oil First Quarter Report (2012).

Further to the buyback scheme, MPC are to enter a MLP<sup>10</sup> in 2012. The board has approved the evaluation of midstream assets that can be added to the MLP, which Marathon will then sell a minority stake of in a late 2012 IPO. Morgan Stanley estimates that the MLP will produce a USD700MM upside for shareholders, implying an upside per share of USD17 in long-term value.

At the end of 2010 marathon conducted refining, marketing and transportation activities in the Midwest, Gulf Coast and Southeast regions of USA. With an aggregated refining capacity of 1,142mbpd Marathon was the fifth largest refiner in the USA, supported by a six-plant network and integrated terminal transportation system which delivered to Marathon brand as well as “Speedway” marketing stations across the country.

The downstream distribution network is very extensive and marathon delivers to clients such as petroleum retail stores, asphalt terminals, airports, light product terminals and marine marketing. The company operates 122 trucks, 168 barges, 14 towboats as well as 1,760 leased railcars to allow nationwide transportation coverage. The pipeline transportation system operates through a wholly owned subsidiary called “Marathon Pipe Line,” transporting refinery output products in the Midwest and Gulf Coast regions. The system consists of 1,707 miles of crude oil lines and 1,825 miles of refined product lines according to Marathon Oil Annual Report (2011).

Both retail-marketing brands owned by Marathon have continuously been rated as most favored by customers in the areas in which they operate, offering convenience stores and several types of fuel. As of 31 December 2010, Speedway operated 1,358 retail outlets across seven states accounting for 13% of refined products revenue that year stated in the Marathon Oil Annual Report (2011). In their annual report Marathon outlined that the most competitive aspects of the downstream business consisted of hiring and retaining talent, acquiring crude with the appropriate sourness and competing for upstream drilling contracts.

---

<sup>10</sup> Master Limited Partnership: A limited partnership that is typically traded on a public exchange, combining the liquidity of publicly traded securities with tax benefits of limited partnerships. MLP's are especially common in the oil and gas midstream segment

In early 2011, Marathon owned Speedway LLC, the 4<sup>th</sup> largest retail chain in the USA, and franchised the Marathon Branded Gasoline to 5,100 locations in the Mid-West. During the Morgan Stanley presentation in May 2011, management outlined future plans to further expand the high-investment-high-margin Speedway business through investments. In 2010, Speedway capex was USD84MM, USD145MM in 2011 and in 2012 this number has grown to USD353MM (projected.) Likewise the pipeline transportation capex has more than doubled, up from USD102MM in 2011 to USD230MM in 2012.

Further to Marathon's plans to expand the retail segment, the firm announced in conjunction with the 1Q12 report that it was to acquire 88 GasAmerica convenience stores to increase its presence along important transportation corridors in midwest USA. The reason for this according to management is that the convenience store business margins are significantly higher within merchandise sales than for gasoline sales, and management attributed an increase in merchandise margin for the USD17MM increase in Speedway's result for 2011. Whereas the margin for gasoline differs from USD0.1064/gallon to USD0.1096/gallon from 2011 to 2012, the margin for merchandise in the first three months of 2011 and 2012 is USD158MM and USD179MM respectively.

### **5.3 Results – Financial**

The financial part of the results will provide an overview of the current market environment Marathon Oil and Marathon Petroleum operates in and their performance relative to this environment. All financial data in this section was gathered from Thomson ONE (2012-04-24).

#### **5.3.1 Peer Group and Time Period**

The split into two individual companies has enabled us to create two separate peer groups consisting of upstream and downstream firms to put the performance of the Marathon Oil and Marathon Petroleum stock before and after the spin-off in a relevant context, controlling for the overall performance of the industry. Marathon Oil pre-demerger is compared to conglomerates: Chevron Corporation, ConocoPhillips and Hess Corporation, named The Conglomerate Index. After the demerger, the chosen peers are purely upstream companies: Anadarko Petroleum Corporation, Apache Corporation, Devon Energy Corporation and Occidental Petroleum. The peer group for Marathon Petroleum consists of Sunoco, Tesoro Corporation and Valero Energy Corporation, pure downstream companies. We have used the



peer groups to create weighted indexes, which has then been used as criterion for the stock performance of Marathon Oil and Marathon Petroleum in the graph below. Chosen time period is 2010-04-23 to 2012-04-23, with the event date occurring 2011-06-31 and first trading day of MPC 2011-07-01.

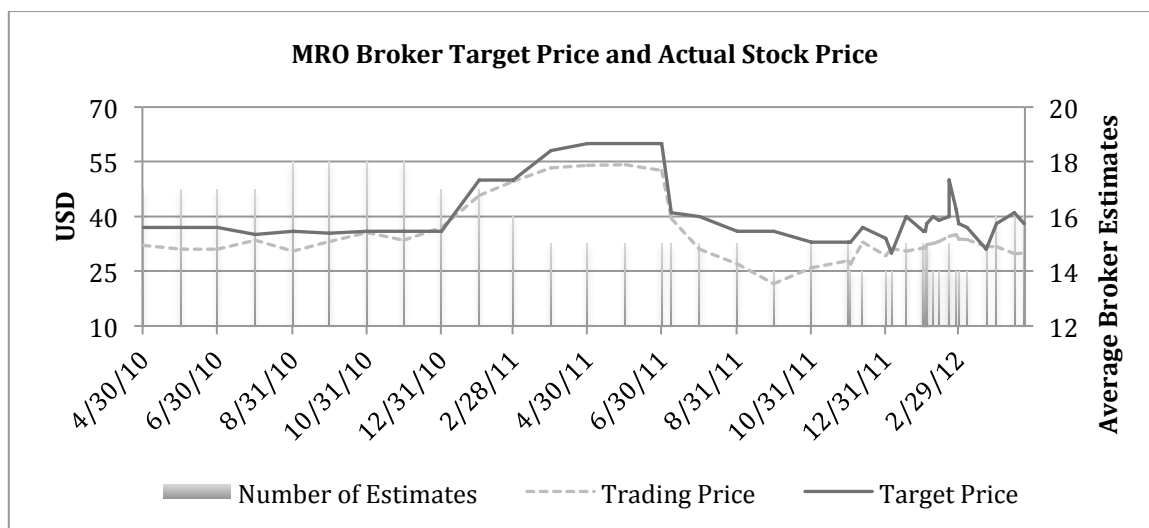
### **5.3.2 Stock Performance**

Between 2010-04-23 and 2011-06-31, the Marathon Oil stock price increased from USD33.08 to USD51.40. Despite an increase of 57.64%, the Marathon Oil stock was outperformed by the conglomerate index, which accumulated a return of 84.40%. Over the time period, the conglomerate index was clearly outperforming Marathon Oil from November 2010, to the event date when Marathon Petroleum was founded.

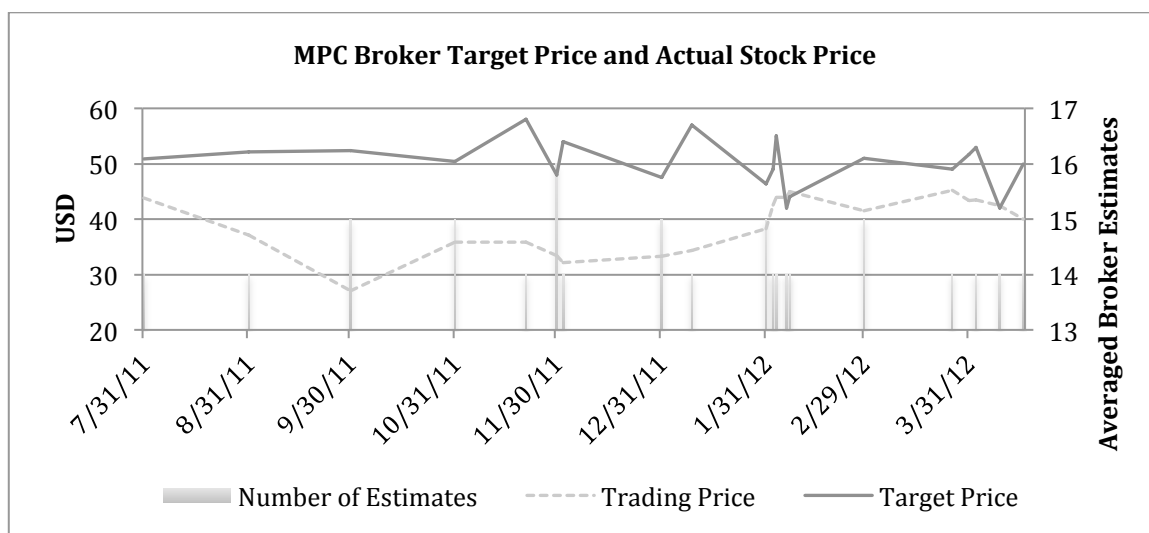
When looking at the performance of Marathon Oil after the spin-off event date, 2011-06-31 to the end of the chosen time period, 2012-04-23, Marathon Oil's stock remains largely unchanged (Appendix 10.1). MRO seems to lie above index consistently after the spin-off, trading at a premium on the 23<sup>rd</sup> of April 2012. During a dip in September 2011, MRO experiences significantly less volatility than its peers.

Over the same time period, Marathon Petroleum gains value but is outperformed by the downstream index, which proves to be more substantially more volatile (Appendix 10.2). Marathon Petroleum opens at 39 USD per share and closes at 40.26 twelve months later, reaching a return of 3.23% for the period, not counting dividends. The comparable index closes at 43.33, accumulating a return of 11.10%. When MPC opens for trading, the market cap of the two firms instantly trades at a USD20 per share premium (USD71.41) to that of the combined entity, illustrating the effect of the diversification discount being mitigated.

Further relating to share price, we have looked at how well MRO and MPC have performed in relation to the expectations of the finance industry, represented by their broker target price. As the graph below shows Marathon Oil stock price has continually been lower than the target price, both before and after the spin-off indicating that the mispricing is in the market and not in the firm's potential.



Marathon Petroleum follows the same trend, but the difference between trading price and target price is far more significant and changes prove to be more volatile. Looking at the time period 7/31/2011 to 4/1/2012, the MPC trading price moves from the target price during the first two months and then maintains a steady upward sloping trend to USD40 per share, USD10 from the target price of 50.



### 5.3.3 Shareholder Value

Has Marathon Oil has increased the wealth of its shareholders through the spin-off, by means of dividends and increased share prices of MRO and MPC? One can find arguments to support the claim that both the MRO and MPC stock has performed well after the demerger, since MPC has achieved positive returns even though the downstream index performs better. The performance of the downstream index is mainly driven by the recent success of Sunoco,

which has shifted its strategy to focus on retail, selling its refineries and freeing up cash in the process according to New York Times DealBook (2011). Marathon Petroleum performs well in relation to index, though achieving negative returns during the time period. Cumulatively, the firms resulted in a tremendous 40%

This can be exemplified through the situation of one investor holding two shares of Marathon Oil before the spin-off, and thus receiving one share of Marathon Petroleum. Between June of 2011 and April of 2012, that investor receives a total of USD2.23 in dividends and USD-4.06 in capital gain, due to declining stock prices. This totals at USD-1.83. Share repurchases are also a factor here, especially the considering the size of the planned Marathon Petroleum stock buyback according to Lefebvre (2012) at 4-Traders. As previously stated, Morgan Stanley estimated in 2012 that the USD2 billion buyback could have an USD11 per share uplift in the long run according to Morgan Stanley (2012).

#### **5.3.4 Risk**

The payoff related to owning the stock leads on to the risk associated with the performance of Marathon Oil and Marathon Petroleum. First off, has the capital structure of Marathon Oil been diverging since the demerger? The debt to equity ratio has been calculating by adding long-term debt to the current portion of long-term debt, divided with total shareholder equity.

Marathon Oil currently has a D/E ratio of 0.2717, reported in March of 2012. The ratio has declined steadily from 0.3006 since the demerger and is currently at their lowest D/E level for the past ten years. Marathon Petroleum on the other hand, has used a larger portion of debt to finance their assets, which is associated with more risk and higher financial leverage. When the company was founded, the D/E ratio was 0.3647, the current maximum level reached by Petroleum. During the existence of Marathon Petroleum, the D/E dropped to a minimum of 0.3283 in September of 2011 and increased to 0.3586 in April of 2012, as a result of the share repurchase.

Marathon Oil and Marathon Petroleum standard deviations of stock returns are in line with the situation regarding D/E capital structure. Returns of Marathon Oil stock have a standard deviation of 0.028 during the time period 2011-06-23 to 2012-04-24. Marathon Petroleum returns have a standard deviation of 0.032 for the same period. This represents a difference

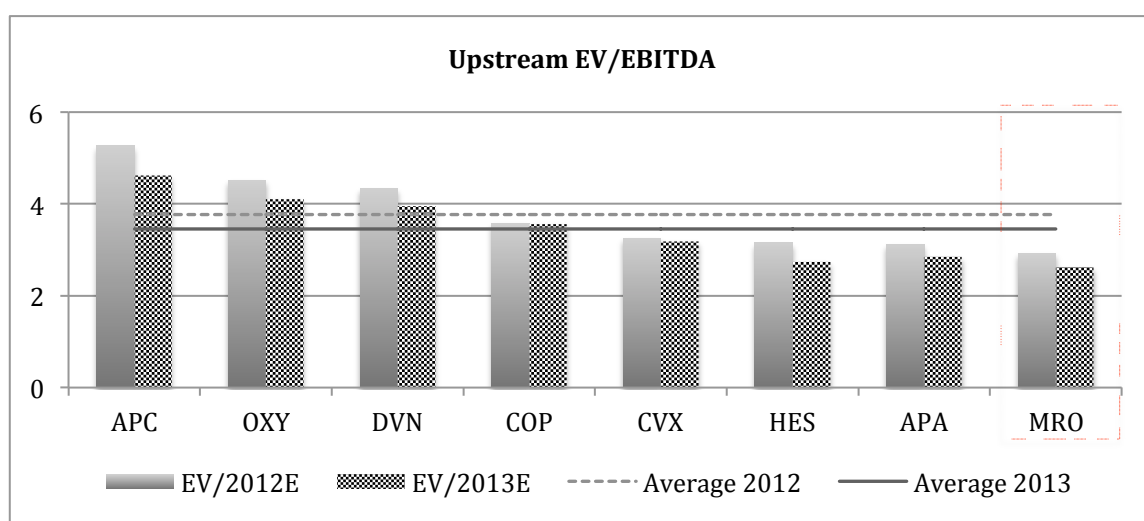
of 15.98%, comparable to a difference in average D/E-ratio over the period of 20.28% between the two companies, with Marathon Petroleum holding the higher numbers in both.

The current beta of Marathon Oil is 1.33; measuring how large of an impact movement in the stock market will have on the performance of Marathon Oil. In the spring of 2011, a number of months before the spin-off, Marathon had a beta of 0.931. To put these numbers in context, the Marathon Oil beta range for the previous 5 years has averaged 1.201, maxed out at 1.564 in November 2008 and reached its' lowest point in September 2007 at 0.294. Marathon Petroleum has not existed long enough for a beta to be computed.

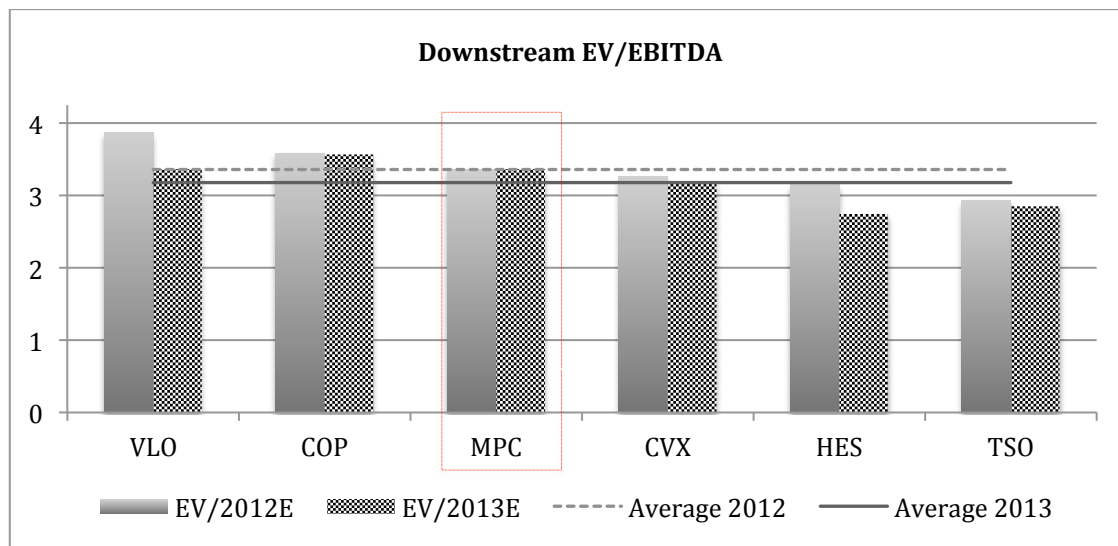
### 5.3.5 Valuation Multiples

To put a fair market value on Marathon Oil and Marathon Petroleum, we have looked at EV/EBITDA in conjunction with P/E. EV/EBITDA was chosen over EV/EBIT because of the generally high levels of CAPEX in the oil industry, making EBITDA the superior comparison measurement. For creation of EV/EBITDA averages the companies mentioned when describing the stock performance indexes are now divided into two groups: Upstream and downstream, both including the conglomerates. Sunoco was excluded from the downstream group, due to being an extreme outlier.

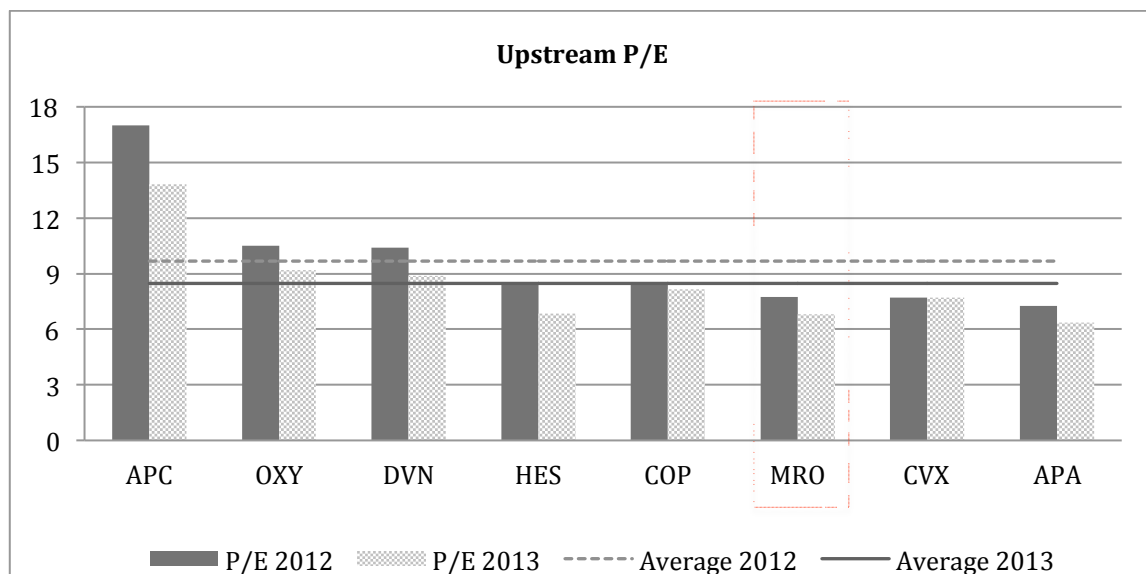
The 2012/2013 EV/EBITDA multiple averages for upstream are 3.77/3.45. Marathon Oil falls short of reaching either and achieves the lowest multiple of the nine companies listed, at 2.92/2.53. Their enterprise value is 36.62% of the average EV and the EBITDA reaches 45.07% of the average in the upstream group.



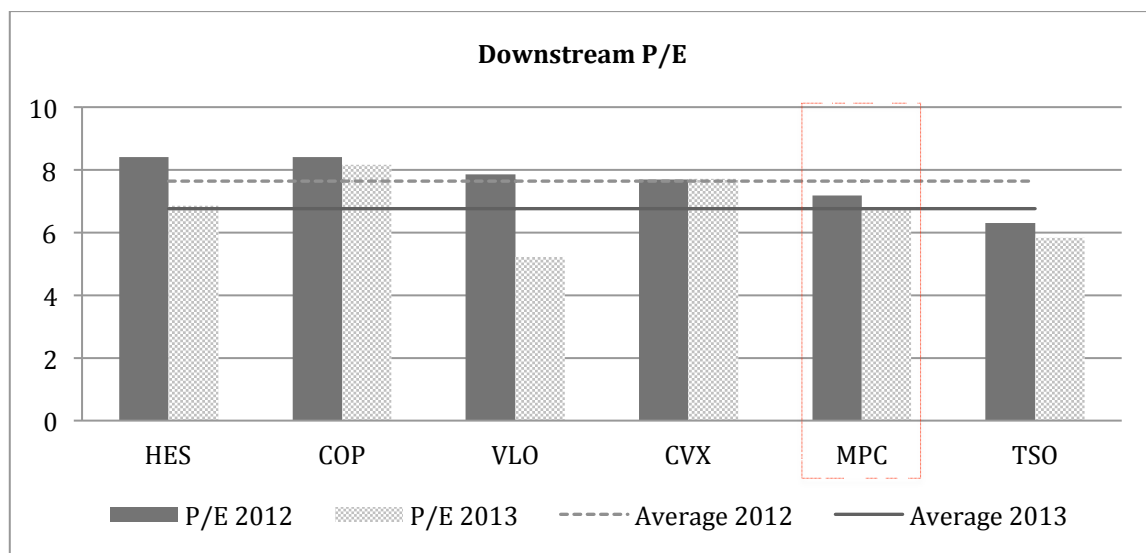
Marathon Petroleum performs better when compared to the downstream EV/EBITDA group. For 2012/2013 Petroleum reaches multiples of 3.37/3.37, compared to averages of 3.36/3.18. Their EV and their EBITDA reaches 23.27% and 23.30% of average EV/EBITDA in the Downstream group respectively.



As EV/EBITDA is neutral to capital structure, the analysis will also focus on the price-to-earnings ratio. The up- and downstream groups chosen for comparison are the same as above, with Sunoco excluded. For the upstream group, 2012 and 2013 P/E averages were 9.68 and 8.47 respectively. Marathon Oil fell short of both, at 7.75/6.82, indicating that the stock is inexpensive compared to its' peers.



Downstream has lower P/E averages, at 7.64/6.76 for 2012 and 2013 respectively. Marathon Petroleum achieves a multiple of 7.18/6.79. The P/E ratio climbs above the average for 2013 due to increased estimate earnings for 2013, as can be seen from the chart below.



## 5.4 Results- Managerial

In terms of corporate governance, Marathon outline in their 2011 Code of Ethics report that the board should be able to “make independent decisions on behalf of all shareholders...we will take all appropriate steps to support such a Board.” As a result of the transaction, Marathon Petroleum was able to recruit a Board of Directors from scratch to tailor the competencies of the members to the long-term goals of the firm. Likewise, following the departure of several members with key knowledge of the downstream segment, Marathon Oil were able to replace these with executives that possessed competencies better aligned with its corporate strategy.

For example, Anthony R. Kenney, President of Speedway LLC and George P. Shaffner, Senior Vice President of Transportation and Logistics are both excellent additions to the newly formed downstream company where their competence is better affiliated with the nature of the business rather than in the integrated Marathon company.

Marathon Oil mentioned in their 2Q12 report a positive surprise for an issue, which had been overlooked prior to the demerger. The nature of upstream oil demands a high percentage of contractor usage (these include Schlumberger, Halliburton etc.) In Marathon’s case, the outsourced workforce accounts for 55% of the total work hours in 2011. Following the

demerger MOC has performed better in “identifying, managing and mitigating risks associated with out... contractors”

To tackle the issue of declining human resources in the western hemisphere, Marathon Oil has engaged in vigorous recruiting programs in developing nations such as Equatorial Guinea. In 2011, approximately 70% of the workforce consisted of national employees, an improvement from 51% the previous year.

## **6.0 Analysis**

### **6.1 Operational**

Our analysis of the firms’ operations is split into analysis of MOC operations and MPC operations. We begin by looking into the upstream segment, which is analyzed on a basis of base assets and growth assets. The downstream analysis is separated into a refining part and a marketing park, the latter referring to commercial sale of gasoline through the Speedway and Marathon brands.

#### **6.1.1 Upstream Base Assets**

After examining plans for future growth from MRO management, it becomes clear that base assets are no longer a key area of development. This can easily be explained in light of the recent transaction. The main function of base assets is to provide stable cash flow, and these can be seen much like bonds. In most cases, the pricing of licenses fairly accurately represents the resources a firm is expected to find in the vicinity, making it quite unlikely for a firm to experience a large economic upside in a developed field. During the time of Marathon Corporation, a steady income of cash was required to finance the downstream segment, which relied heavily on upstream income since it could not produce enough cash by itself. Furthermore, the cost to develop a field is relatively low, and can easily be offset by income from base assets. Even the development of US unconventional assets such as Eagle Ford and Bakken are largely self-financed because the probability of these reserves containing large amounts of reserves has already been supported by previous geological analysis.

Marathon has made it clear that from now on the firm’s focus will be on developing these unconventional US reserves. This argument highlights the problem with capital allocation in a conglomerate that faces changes in their environment, which changes the investment decisions ahead significantly. Not only does the shift from base assets to growth assets draw attention to the fact that it will probably prove harder to allocate capital between the up- and

downstream divisions, but it can also be a source of additional costs according to multiple studies, such as Lamont (1997) and Stulz (1990). A firm in a highly competitive industry does not have the luxury to ignore a factor that could have the potential to cut costs in that manner.

The sale of MRO's Alaskan assets is a start to relocating capital into the unconventional field development, as MRO is hoping to refocus their portfolio by reducing the number of base assets in their portfolio. This is an effort to specialize accordingly with industry developments, committing to focusing as a value-increasing activity after the demerger.

Future plans to disregard gas production and focus on liquids further narrows the focus of MRO in hopes of reducing the diversity discount by concentrating growth to unconventional US liquid plays. Examples of such unconventional oil reserves are the Eagle Ford Shale in Texas and Bakken Shale in North Dakota. The reasoning here is that although according to current projections, these sites will account for roughly 40% of production in 2016 compared to developed sites there are advantages such as proximity to refineries, much simpler extraction (than offshore drilling which is predominant in North Sea and Africa,) and significantly lower operational expenses which should help to drive the upside. Although the segments may seem to be identical, reality could not be further from the truth. The studies of Lang and Stulz (1994), Berger and Ofek (1995) and Servaes (1996) are all relevant to show that by removing the capital-heavy plays in favor for the existing and future unconventional plays, MRO will enjoy a higher valuation by transforming into a high-risk-reward firm, providing higher return on capital than with base assets. Operationally, it will transform from a diversified conglomerate to a focused firm, free to pursue an optimal strategy given the recent changes in the environment. Following that strategy may not have been possible as an integrated firm, given the different capital allocation needs between the two divisions mentioned above.

Currently, brokers are valuing Marathon at a deep discount to NAV despite a portfolio of long-lived assets. Management would have to cleverly dispose assets in favor for acreage acquisitions and hope for successful development of these sites. It would make sense for MRO to dispose base assets as the upside for US unconventional shale development would encourage a much higher valuation, especially since the income-cost spread has remained fairly consistent over the past few months, and given that MRO is putting most of its focus



on growth assets. Given the lack of international players in US shale plays, the abundance of 2P reserves and MRO's extensive knowledge of the area, it would be wise to follow up on its USD3Bn targeted asset disposal before end of 2012 given the currently high valuation of upstream base assets. In March 2012, APA acquired a stake in the Beryl field for a 50% premium, in line with other acquisitions this past year according to Credit Suisse (2012).

### **6.1.2 Upstream Growth Assets**

Given that MRO expects Eagle Ford alone to account for 73% production growth before 2015, there is no doubt that the firm has to shift its priorities away from the base assets to unconventional US. In line with the Kahn and Winton (2004) study, MRO acted in the best interest of shareholders by separating the high risk firm from the low risk firm. Any future discoveries resulting in a share price upside will no longer have the possibility to be depressed by an underperforming downstream sector. With the two divisions separated in a bipartite structure, the products offered by Marathon Petroleum and Marathon Oil should now be more profitable than their efficient product mix, if Kahn and Winton (2004) is applicable, due to differing risks. More on this in the shareholder value section in the financial analysis. Although the removal of the downstream operations is an ample beginning, the firm now needs to dispose of base assets that no longer fit the firm's future prospects, in order to avoid a situation where MRO is yet again trading at a discount because of depleting base reserves, despite substantial findings amongst the US resources.

Unfortunately for MRO, and as will be evident in the next section where we examine the spin-off announcement's impact on share price, the time taken by traders to incorporate a clearer focused strategy in the valuation is prolonged until there is clear evidence of a measurable upside from said focus. In MRO's case, despite being well positioned for future prospering from US reserves, Bakken, Woodford and Eagle Ford will need to get well on their way to the 2016 target before growth assets are driving the share price up. Marathon will likely trade at a discount to peers until it gains a clearer focus by divesting some base assets after production from growth assets has been realized. In doing so will they will adapt an investment strategy more closely resembling its pure play peers.

Because all three major growth assets are in the development phase as opposed to the exploration phase, the certainty of reserve accuracy is significantly higher than if these assets were unexplored. Essentially these assets are the aspiration of E&P companies worldwide since it provides them with a vast area of unexplored land with a high success rate, stipulating

a solution to the problem of the global shortage of quality oil and gas assets. MRO's local expertise with horizontal drilling in the USA, the proximity to local refineries and the presence of oil giants such as Exxon and BP with production wells already in place provide further indicators that a share upside driven by the unconventional plays is likely in the near future.

### **6.1.3 Downstream Refining**

One of the first orders of business for MPC was to commission a USD2Bn share repurchase over two years. It is a very bold move on behalf of management since it suggests high confidence in the future cash generation ability of MPC. The decision partly contributed to the outperformance over industry peers, indicating the management's ability to quickly reward the shareholders for holding the stock according to Credit Suisse (2012). Immediately it becomes apparent that MPC is repositioning itself as a low-risk-low-reward firm since rather than utilizing the cash for future expansions, the firm recognizes the poor refining environment currently in place and avoids making any future investments until current assets are optimized to be best in class in terms of profit margin per processed unit.

The share repurchase was accompanied shortly after by yet another shareholder focused announcement: the MLP. The move is also set to underscore the plans to expand Marathon's pipeline segment through organic growth and selective asset divestment and acquisition over the upcoming months. The transactions highlight MPC's ability to pursue tailored strategies to unlock shareholder value, rendering the demerger successful from a shareholder point of view. From an investor's point of view, these actions concur with the findings of Campa and Kedia (2002), namely that a firm pursues diversification as a tool to increase value. The likelihood of the deals going through were Marathon not to split is significantly lower since any excess cash would probably have been used to develop US unconventional shales, or to offset any potential losses in the downstream firm.

In terms of the aftermath to the MPC-MRO relationship, both companies have announced intentions that business will be conducted on a regular basis given the logistics solutions already in place. MPC is however no longer tied to refining MRO crude only, giving it options to purchase stock of different sourness depending on available capacity. The flexibility seeks to solve the problem of tightening margins and will likely have a positive effect on MPC's multiples versus peers.

Looking at the profitability of the firm, as well as the R&M margin and capacity spread it becomes clear just how depressed the environment for downstream players currently is. Keeping in mind that MPC sells a commodity, from a location located close to major trade routes one can understand why management chose to avoid reinvesting money back into the firm, given the lack of a foreseeable upside. What is relevant for the future is that there is money being spent on plant upgrades to provide a capacity surplus, which will provide MPC with the opportunity to capitalize on future opportunities of petroleum derivative shortages.

#### **6.1.4 Downstream Retail & Marketing**

Although the retail and pipeline segments only stood for 12% of total operations income in 2011, it is clear that Marathon is utilizing the opportunity that arose post spin-off to further specialize as an integrated downstream player through investments. The convenience store business is one of reliable but low revenue streams and although it will not make up a significant portion of total revenue, it further emphasizes the direction that MPC is striving to pursue. By investing in the more stable part of downstream oil such as pipeline or retail, MPC will gain the ability to offset refining losses or finance future investments without having to struggle for internal capital with the upstream division. Investors should not expect these divisions to provide a share upside because of their minimal contribution to annual downstream revenue.

MPC's acquisition of GasAmerica, increase in marketing capex and announcement of goals to further integrate the downstream network are all clear indications that management is adapting to the firm's new low risk, steady cash flow profile. Whereas investment in the low margin retail business would not have been feasible with a firm of the combined beta of MRO and MPC, as well as the cost of equity of the combined entity, management can now focus on integration and expansion of its assets to support a steady dividend to shareholders.

### **6.2 Financial Analysis**

The analysis of the financials regarding the spin-off will factor in the goals of the separate entities associated with the corporate decision to spin-off Marathon Petroleum when judging the success of this performance. In addition to this, the potential increase or decrease in shareholder value due to increased transparency or improved performance relative to comparable peers will be considered.

### 6.2.1 Stock Price

As pointed out by Campa and Kedia (2002) in the Previous Literature section, past performance is highly applicable to both the decision of further specialization or diversification and the following success of that choice. However, the state of the oil industry needs to be considered and put into context when evaluating the past performance of Marathon Oil and the decision of specialization. It may not be as simple as regarding specializing or diversifying to become more effective or to search for new growth opportunities due to poor past performance.

With extreme oil comes the promise of new supplies, but as the 'Time "The Truth about Oil" (2012) article stated, the era of cheap oil may actually be gone forever. If extreme oil is as expensive as projected to produce, not only will the promise of future supplies cause a higher oil price but will likely change the structure of the oil business completely. Not only the price, but extreme oil is also associated with a higher environmental risk. If an accident should happen, environmentalists fear that the situation could be impossible to contain, according to the newspaper The National (2012). Comparable is the situation BP faced in the Gulf of Mexico, which dragged down the company's third-quarter profit by over 60 percent, not counting the damage to their public image according to the Huffington Post (2010). BP did manage to contain the disaster, but it still came with a 40 billion USD price tag. One need only imagine the costs if the situation had been impossible to contain or control, to both result and public image. Regarding public image, splitting the up- and downstream sides up could limit the damage to gasoline sales related to a large oil spill.

The performance of Marathon Oil and Marathon Petroleum after the spin-off is in line with the Kirchmaier (2002) study mentioned in the Previous Studies section. Kirchmaier's sample of 48 demergers between 1989 and 1999 showed positive returns for the spin-off, but not for the parent company. However, this does not factor in the performance of comparable peers. The fact that the return of Petroleum is positive, but is underperforming compared to the downstream index could be explained by the instability in Libya. The crude oil reserves in Libya, which Marathon Oil have a operational interest in, are much sweeter than those found in the US. Since sweeter crude oil is cheaper to refine, Marathon Petroleum are bound to face a reduction in margins due to the sudden unavailability of Libyan supplies, which in turn makes it harder for them to compete against their peers in the industry.

The immediate increase in the combined market cap of the two Marathon entities can be explained by the dividend discount, which is mitigated through specialization of both firms post demerger. A 40% premium to pre-merger price is paid amongst the two firms indicating the market's belief in the bipartite structure of MRO. Specialization means fairer cost of debt, equity and WACC for both firms since they are now independent of each other's risk, a change that directly impacts investors by increasing returns and hence shareholder value.

Regarding the stock's price in relation to the target price, the estimates demonstrate the brokers' belief that there is unrealized value that is not reflected in the current stock price. According to Fitzsimmons (2011), this value could lie in unrealized future gains from US unconventional such as Eagle Ford. Marathon has the lowest ratio of base to growth assets in their portfolio, which is a reason for their low relative valuation to peers. Base assets are included in the NAV valuation used by stockbrokers, whereas assets such as Bakken are not because they are non-producing (or very limited production) assets posed for future potential.

As for MPC, three factors are driving the target price up. The share repurchase, MLP and dividend increase are all factors that make brokers price the stock at a premium to market value. Although the gap has decreased since the times of high-margin refining, MPC's ability to give back to shareholders during times of lacking alternative investments of high return. This focus differs greatly from that of MRO, which is now focusing all resources on developing the Bakken, Eagle Ford and Woodford locations and indicates the new independent decision making of MPR with a focus on the risk averse investor.

### **6.2.2 Risk**

Regarding the difference in debt over equity ratio between MRO and MPC, Marathon Petroleum has six large refineries, financed mainly with debt to be able to keep their production at the current level. Marathon Oil on the other hand has used their continuously increasing net income to pay off debt, while having a fairly low cost of equity at 10%, compared to the industry average of 11.24% according to Damoran (2012) at NYU Stern School of Business.

In terms of beta, Marathon Oil is a more volatile and therefore riskier investment than it was pre-demerger. It is now associated with a higher systematic risk and a higher expected return than before, which is in line with the changes taking place in the industry at the moment. In other words, the focus on new supplies is leveraging the risk/reward-ratios of the upstream

business upwards, as expected. This is causing the up- and downstream businesses to move in different directions faster than before.

In the Kahn and Winton (2004) study, it is stated that bipartite structures with differing risks involved in their business will be likely to outperform unitary structures, due to the expected profits from the mix of products will be lower. It also allows for proper compensation to creditors and equity holders as risk profiles are separated. This is highly relevant considering the increasing volatility, speaking for the decision to spin off Marathon Petroleum. With this study as an argument, the case could also be made that the demerger is a presumptive action. This can be based on the belief that as the E&P sector changes and becomes even more risky with time, the decision to demerge or not will be more or less involuntary among American Superoils. Logic states that the costs related to diversification are bound to increase when the characteristics of the two industries keep moving in different directions and in this case being an early adopter of the bipartite structure may be a way to avoid further costs. This is naturally related to how the upstream part of the oil conglomerates behave, which form of extreme oil they focus their investments on, the advancements in technology and the risks related with excavating the chosen supply.

### **6.2.3 Valuation Multiples**

Marathon Oil has a relatively low EV and EBITDA, though the EBITDA is on a significantly higher level when compared to the average. This indicates that the market is undervaluing Marathon Oil, as there may be synergies and operational advantages related to the exploration of the Eagle Ford Shale not yet realized. This is reflected even more with the 2013 numbers, as the estimate EBITDA of Marathon Oil increases and reaches 47,42% of the average.

The EV and EBITDA of Marathon Petroleum compared to the average EV and average EBITDA of the industry indicates that the valuation multiple is balanced in relation to the other companies in the group. It is however a possibility that the valuation is low and that the companies are trading at a discount mainly due to factors affecting the oil price; falling demand due to recession and growing supplies, along with the state of the economy in general according to Fahey and Kahn (2012). Another reason for the low multiple is that future income potential from US assets is not yet realized in the stock price due to the relatively low coverage compared to its peers. Currently, Marathon is valued mostly for its base assets in the eastern hemisphere, but these assets are cash cows with low potential to

outperform estimates. MRO is hence traded at a discount until the future growth potential is more apparent after further appraisal wells.

The market is not expecting Marathon Oil to be a growth prospect earnings-wise, representing the doubts surrounding the profitability and high risk involved with excavating oil shale. Marathon Oils latest available report, the first quarter 2012 results, point to the same fact: Marathon Oil cash flow, net income and adjusted net income are down compared to the previous period according to the Marathon Oil 2012 First Quarter Results (2012). The Marathon Petroleum P/E multiple highlights the growth potential, affected by a strong first quarter 2012 report with increased net income per diluted share according to Marathon Petroleum (2012).

### **6.3 Managerial Analysis**

Since little focus is given to the description to compensation schemes beyond those of the members of the board, in the sources available to us, the analysis here refers mainly to the election of the new management teams and board of directors. The board of directors has been optimized depending on the different competencies required to run each firm, allowing each member to focus only on the division whose interest he represents. This allows or swifter, more appropriate investment decisions in the future, something which will be especially valuable to MRO during the development of Eagle Ford. One has to assume that changes in middle management compensation incentives has also been optimized to reflect the best interest of the division he works for, as the risk profile has altered greatly since the demerger as since this issue was clearly outlined in the transaction prospectus.

Extensive investments in educational and training programs are now more easily allocated since capital no longer has to be shared with the Petroleum division which would benefit little from training an African workforce since operations are limited to the USA. With regards to the downstream company, it is noted in the most recent corporate governance report that stock compensation is only to be given to executive directors to “better align their interests with those of the stockholders” according to Marathon Petroleum (2012).

## 7.0 Conclusions and Implications

A lot has changed in the structure and outlook of both newly created entities since the spin-off happened. For MPC the spinoff has led to more capital being deployed to shareholders through buyback schemes and a MLP IPO, while MRO have undergone large changes in their E&P outlook to position itself as a North American unconventional pure-play firm. The different risk profiles of MRO and MPC show how skewed the risk profile of a unitary firm would have been if Marathon would have kept its divisions in one firm, given the recent changes to the available supplies in the upstream industry.

Were MRO to continue their base asset operations as the main focus, it would have been a better idea to maintain an integrated structure because both businesses provide fairly stable cash flows and have a similar risk profile. However, given the direction of the oil industry in terms of falling margins and depleting conventional reserves, MRO is doing it's shareholders a favor by engaging in the unconventional plays at an early stage, especially given the high certainty of hydrocarbon extraction from its growth assets. As the upstream players focus more and more on extreme oil and risks increase accordingly, choosing to follow this trend may prove involuntary with time. One could view Marathon Oils investments in the Eagle Ford and Bakken Shale as a catalyst to this early transition, having accelerating the process of deciding when to spin off Marathon Petroleum.

As a conclusion to this study, we see that both MRO and MPC are well on their way to reaching the goals set prior the demerger. This is seen already in terms of shareholder value having been unlocked in terms of share buybacks, a more transparent risk profile, excellent future prospects and an increase in flexibility and independent decision making, highlighting the route to specialization each firm is undergoing. One of the main reasons behind the success of the demerger is the timing in accordance with the change the industry is going through, and the correlation this has with Marathon Oil extreme oil reserves in the US. If demergers among large oil conglomerates prove to be a trend in the future, being first and being able to adapt their structure to the new needs of the evolving industry environment will prove to be an advantage.

For Marathon Oil to pursue an optimal strategy in the new climate, using a unitary structure with Marathon Petroleum is a compromise they cannot afford to make. It would mean compromises in capital allocation regarding required investments in the new environment as



well as increased difficulties regarding formulating optimal managerial incentives for both divisions.

Regarding implications, one has to consider the importance of extreme oil supplies in the US, as it can be considered a complete game-changer. The large US Oil corporations cannot be locked out of owning them, as much of the new supplies are located stateside. Considering the importance of oil supplies, US players in the industry often run the risk of being forced to only operating the rigs in foreign countries, as laws can prevent them from owning an interest. Further, if the conglomerates choose to focus on extreme oil, they are faced with a similar case to the one highlighted in this study, with conflicting interests between its two divisions due to a diverging climate. With these factors as a foundation, Marathon Oil showed that there is a diversification discount in the oil industry and that shareholder value could be unlocked through specialization. Implications of this should be that the rest of the industry follows their lead and adjusts to the new environment by specializing. The time frame for this should be affected by the rate of which the firms invest in unconventional oil reserves.

The theories and literature reviewed in section 2, Previous Literature and Related Studies, are all connected and relevant to the result of this thesis, for example the diversification discount, the observed performance effect of demergers related to specialization, benefits related to diversification. In some cases, its' not possible to, and perhaps not even relevant, to determine which of the theories that managed to explain the phenomenon best, given that all theories focus on factors that are important. In our case, we found the diversification discount presents a plausible theory to explain the change in shareholder value associated with the demerger, in conjunction with benefits to specialization and recent developments in the industry.

## 8.0 Bibliography

- Argonne Energy Systems Division. (2011, December 1). *Projection of Chinese Motor Vehicle Growth, Oil Demand, and CO2 Emissions through 2050*. Retrieved May 6, 2012, from Argonne National Laboratory: <http://www.ipd.anl.gov/anlpubs/2011/12/58260.pdf>
- Aron, D. (1988). Ability, moral hazard, firm size and diversification. *The Rand Journal of Economics* , 19, 72-87.
- Berger, P., & Ofek, E. (1995). Diversification's effect on firm value. *Journal of Financial Economics* , 37, 39-65.
- Bodnar, G., Tang, C., & Weintrop, J. (1997). Both sides of corporate diversification: The value impacts of geographic and industrial diversification. *NBER Working Paper Series* (6224).
- Cusatis, P. J., Miles, J. A., & Woolridge, J. R. (1993). Restructuring Through Spin-Offs. The Stock market's Evidence. *Journal of Financial Economics* , 33 (3), 293-311.
- Campa, J. M., & Kedia, S. (2002). Explaining the Diversification Discount. *Journal of Finance* , 57 (4).
- Credit Suisse. (2012, February 12). Marathon Petroleum Corporation. *Broker Report* . New York, NY.
- Credit Suisse. (2012, February 27). Marathon Oil Corporation. *Broker Report* . New York, NY.
- Eagle Ford Shale. (2012, May 12). *Marathon at Eagle Ford*. Retrieved May 15, 2012, from Eagle Ford Shale : <http://www.eaglefordshale.com/companies/marathon-oil/>
- Ernst & Young. (2011). Business Risk Report 2011: Oil and Gas Sector. New York , USA.
- Damodaran, A. (2012-1-January). *New York University Stern School of Business*. Retrieved 2012-5-February from [http://pages.stern.nyu.edu/~adamodar/New\\_Home\\_Page/datafile/wacc.htm](http://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/wacc.htm)
- Dezember, R. (2011, October 18). It's official: Age of Shale has arrived. *The Wall Street Journal*
- Deloitte. (2010, November 18). *2010 Deloitte Oil & Gas Conference Report*. Retrieved April 15, 2012, from Deloitte: <http://www.deloitte.com/assets/Dcom-UnitedStates/>
- Eisenhart, M.: 1991, 'Conceptual frameworks for research circa 1991: Ideas from a cultural anthropologist; implications for mathematics education researchers', Proceedings of the 13th Annual Meeting of the North American Chapter of PME , Vol. 1, Blacksburg, VA, pp. 202-219.
- Fahey, J., & Kahn, C. (2012-5-April). *Huffington Post*. Retrieved 2012-15-April from [http://www.huffingtonpost.com/2012/05/06/oil-prices-decline-months\\_n\\_1489942.html](http://www.huffingtonpost.com/2012/05/06/oil-prices-decline-months_n_1489942.html)
- Fitzsimmons, M. (2011-4-March). *Seeking Alpha*. Retrieved 2012-2-April from <http://seekingalpha.com/article/256486-marathon-oil-rockin-the-bakken>

Glover, T. (2012-7-April). *The National*. Retrieved 2012-25-April from <http://www.thenational.ae/lifestyle/personal-finance/quest-for-extreme-oil-leaves-nations-blind-to-the-risks>

Gruenspecht, H. (2010, December 12). *US Energy Information Administration*. Retrieved April 10, 2012, from eia.gov: <http://www.eia.gov/neic/speeches/howard12102010.pdf>

Grappier, J. (2011, July 14). *Business Blog: After the oil mergers, here come the demerger*. Retrieved March 2012, 2012, from Financial Times: <http://blogs.ft.com/businessblog/2011/07/after-the-oil-mergers-here-come-demergers/#axzz1s29rLfQD>

Hite, G., & Owers, J. (1983). "Security Price Reactions Around Corporate Spin-off Announcements." *Journal of Financial Economics*. p.409-436

International Energy Agency. (2011, January 18). *Oil Market Report*. Paris, France.

Kahn, C. & Winton, A. (2004). Moral Hazard and Optimal Subsidiary Structure for Financial Institutions. *Journal of Finance*, 109.

Kirchmaier, T. (2002). The Performance Effects of European Demergers. *London School of Economics and Political Science*.

Lang, L., & Stulz, R. (1994). Tobins Q, Corporate Diversification and Firm Performance. *Journal of Political Economy*, 102, 1248-1280.

Lamont, O. (1997). Cash flow and investment: Evidence from internal capital markets. *Journal of Finance* 52, 52, 83-110.

Lefebvre, B. (2012-2-January). *4-Traders*. Retrieved 2012-5-February from <http://www.4-traders.com/MARATHON-OIL-CORPORATION-13613/news/>

*New York Times DealBook*. (2011-6-September). Retrieved 2012-20-02 from <http://dealbook.nytimes.com/2011/09/06/sunoco-to-sell-refineries/?ref=sunocoinc>

Maksimovic, V., & Phillips, G. (2002). Do conglomerate firms allocate resources inefficiently across industries? *Journal of Finance*, 58, 721-767.

Marathon Oil. (2010). *10-K Form*. Delaware: SEC.

Marathon Oil. (2011). *Annual Report 2011*. Houston: Marathon Oil.

Marathon Oil. (2011). *Code Ethics Report 2011*. Houston: Marathon Oil.

Marathon Oil. (2011). *Company Factbook 2011*. Houston: Marathon Oil.

Marathon Oil. (2012). *ISI Bermuda Petroleum Conference*. Houston: Marathon Oil.

Marathon Oil. (2011). *Living our Values 2011*. Houston: Marathon Oil.

Marathon Oil. (2011). *UBS Oil and Gas Conference Sep 2011*. Houston: Marathon Oil.

- Marathon Oil. (2011). *Quarterly Reports 1Q10-1Q12*. Houston: Marathon Oil.
- Marathon Petroleum. (2012-1-May). *First-Quarter 2012 Results*. Retrieved 2012- 3-May from [http://www.marathonpetroleum.com/News/News\\_Releases/Press\\_Release/?id=1689487](http://www.marathonpetroleum.com/News/News_Releases/Press_Release/?id=1689487)
- Marathon Petroleum Corporation. (2012). *Corporate Governance Report 2012*. Delaware: Marathon Petroleum.
- Marathon Petroleum Corporation. (2011). *IPO Document*. Delaware: Marathon Petroleum.
- Marathon Petroleum Corporation. (2012). *Quarterly Reports 1Q10-1Q12*. Delaware: Marathon Petroleum.
- Miles, J. A., & Rosenfeld, J. D. (1983). The Effect of Voluntary Spin-Off Announcements on Shareholder Wealth. *Journal of Finance* , 38 (5), 1597-1606.
- Montgomery, A., Hill, D., & Moore, R. (2011-01-12). *Divesting Control by Demerger*. Retrieved 04 29, 2012, from Herbert Smith M&A: <http://www.herbertsmith.com/NR/rdonlyres/>
- Morgan Stanley (2012). *Marathon Oil Broker Report*. 2012-02-17. London
- Oil & Gas Journal. (2011, February 7). Refiners to add more conversion, pay more for complexity. London, UK.
- Oilweek. (2011, January 16). Refinery and petrochemical construction cost rising. Calgary, Canada.
- OPEC. (2011, March 3). *World Oil Outlook 2011*. Retrieved April 12, 2012, from Organization of the Petroleum Exporting Countries: [http://www.opec.org/opec\\_web/static\\_files\\_project/media/downloads/publications/WOO\\_2011.pdf](http://www.opec.org/opec_web/static_files_project/media/downloads/publications/WOO_2011.pdf)
- Perold, A. (2005). Capital allocation in financial firms. *Journal of Applied Corporate Finance* , 17 (3), 110-118.
- Scharfstein, D. (1998). The dark side of internal capital markets II: Evidence from diversified conglomerates. *NBER Working Paper Series* , 6352.
- Servaes, H. (1996). The value of diversification during the conglomerate merger wave. *Journal of Finance* , 51, 1201-1225.
- Skoloff, B., & Wardell, J. (2010-2-November). *Huffington Post*. Retrieved 2012-5-April from [http://www.huffingtonpost.com/2010/11/02/bp-oil-spill-costs-hit-40\\_n\\_777521.html](http://www.huffingtonpost.com/2010/11/02/bp-oil-spill-costs-hit-40_n_777521.html)
- Stulz, R. (1990). Managerial discretion and optimal financial policies. *Journal of Financial Economics* , 26, 3-27.
- Thomson One Analytics. (2012). *Datastream*. Retrieved April 31, 2012. [www.thomsonone.com](http://www.thomsonone.com).

Rotemberg, J., & Saloner, G. (1994). Benefits of narrow business strategies. *American Economic Review* , 84, 1330-1349.

Walsh, B. (2012-9-April). The Truth About Oil. *Time* , pp. 20-27.

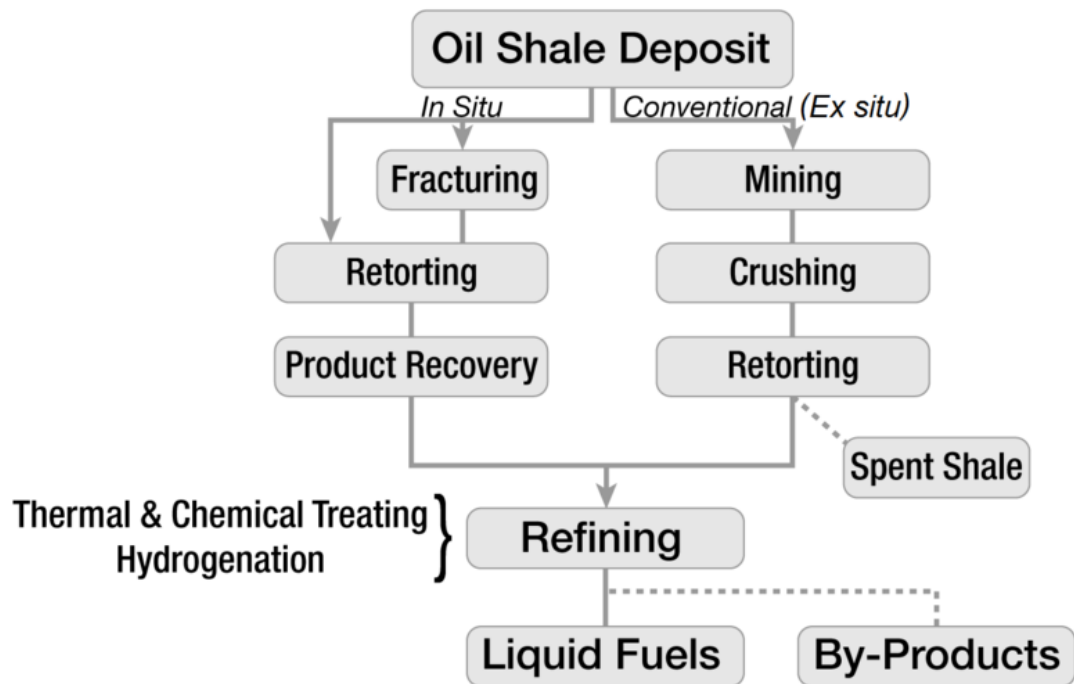
Wernerfelt, B., & Montgomery, C. (1998). Tobin's Q and the importance of focus in firm performance. *American Economic Review* , 78, 246-250.

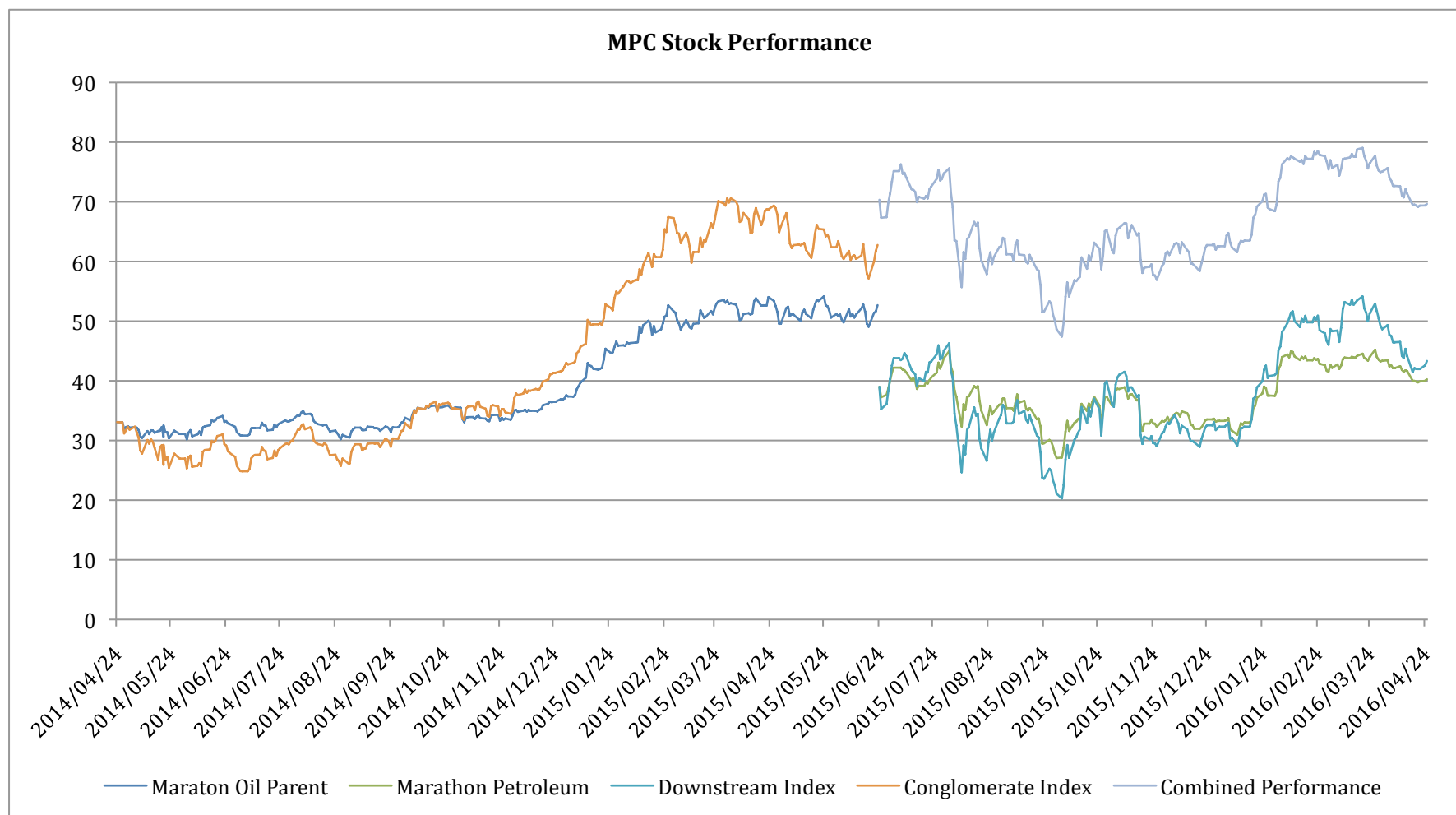
Yin, R. (1994). Case study research: Design and methods (2nd ed.). Beverly Hills, CA: Sage Publishing.

## 10.0 Appendix

### Appendix 10.1

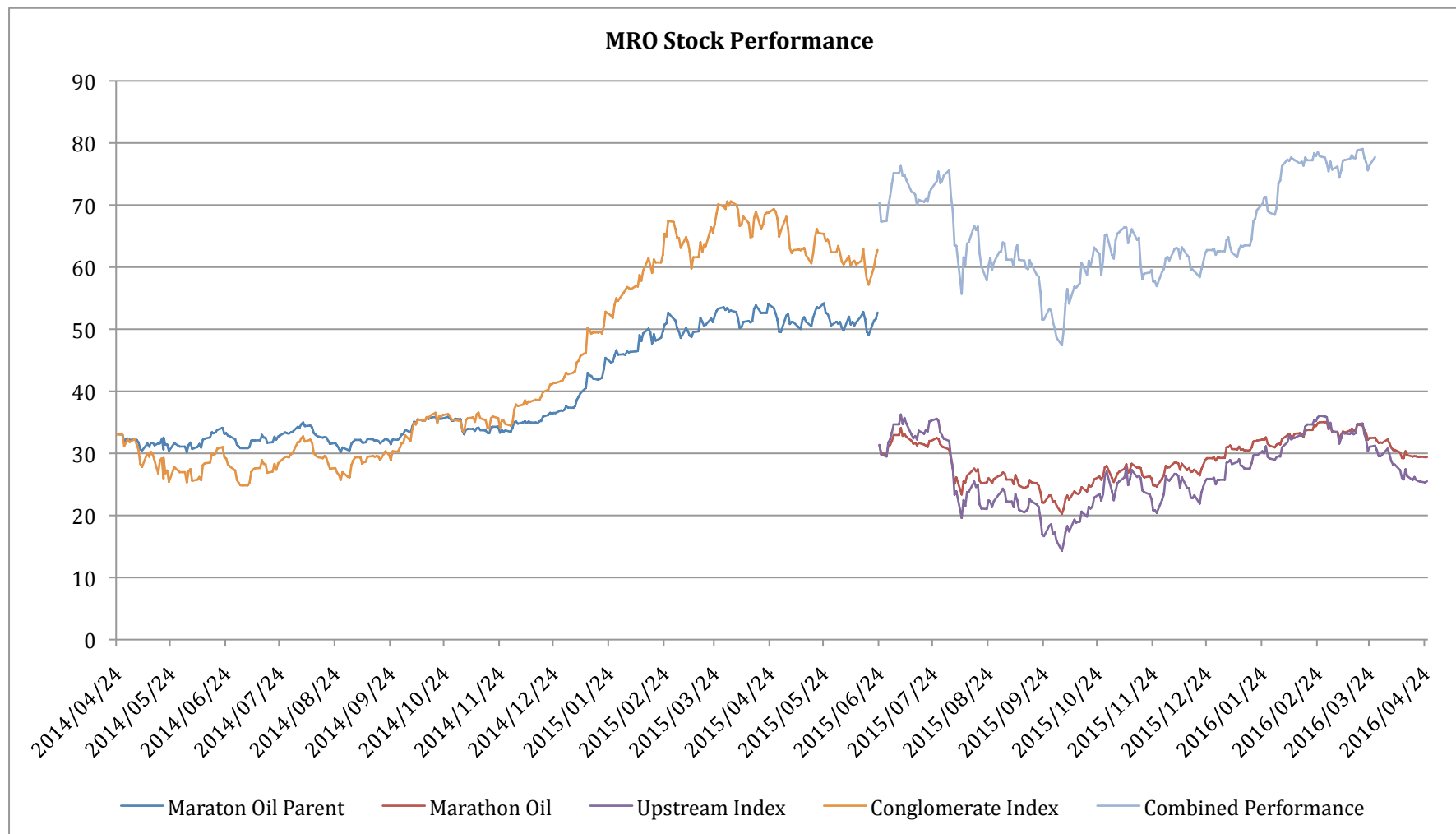
*The difference between processing of conventional and unconventional oil shale*





## Appendix 10.2

*Stock Price Chart 1, the performance of Marathon Oil before and after spin-off*



Appendix 10.3

*Stock Price Chart 2, performance of Marathon Petroleum before and after spin-off*