T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES

THE IMPACT OF FLUCTUATIONS IN OIL PRICES ON ECONOMIC GROWTH: A STRATEGIC ANALYSIS

MASTER'S THESIS

Ayat Basim Hasan AL-MUSAWI

Engineering Management Department

Engineering Management Master in English Program

MAY 2024
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Thesis Advisor: Assist. Prof. Dr. Tuğbay Burçin GÜMÜŞ

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DECLARATION

I, Ayat Basim Hasan AL-MUSAWI, declare that this thesis titled “The Impact of Fluctuations in Oil Prices on Economic Growth: A Strategic Analysis” is the original work I completed to receive my master's in engineering management. I further declare that neither this thesis nor any part of it has ever been submitted to or presented for a research paper or other degree at any other university or institution. (02 /05/2024)

Ayat Basim Hasan AL-MUSAWI

DEDICATION

I dedicate this thesis to my compassionate father… My role model and role model in life is the one who taught me how to live with dignity and glory.

To my affectionate mother... I can't find words that can give her right, as she is the epic of love and the joy of a lifetime, and the example of dedication and giving.

My beloved family, whose unwavering support, love, and encouragement have been my anchor throughout this academic journey. Your sacrifices and belief in me have been a constant source of motivation and I am profoundly grateful for the strength and inspiration you've provided. This work is a testament to our collective determination, and I offer it with deep affection and gratitude. I also dedicate this thesis to all those who have a thirst for knowledge and a commitment to the pursuit of understanding. May this work inspire and resonate with individuals who value the exploration of ideas and the relentless quest for wisdom.

PREFACE

I would like to extend my sincere gratitude to the many individuals who have contributed to the completion of this thesis. First and foremost, I am deeply thankful to my family for their unwavering support, encouragement, and understanding during the long hours of research and writing. Their love and belief in my abilities have been my greatest motivation.

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I am grateful to the institution for providing the resources, research opportunities, and a conducive academic environment for the pursuit of knowledge.

Finally, I would like to thank all the participants and individuals who generously shared their insights and experiences, contributing significantly to the empirical aspects of this thesis.

This thesis represents a collective effort, and I am humbled by the generosity and support I have received throughout this endeavor.

May 2024 Ayat Basim Hasan AL-MUSAWI

TABLE OF CONTENTS

Page

LIST OF TABLES

Page

LIST OF FIGURES

Page

THE IMPACT OF FLUCTUATIONS IN OIL PRICES ON ECONOMIC GROWTH: A STRATEGIC ANALYSIS

ABSTRACT

This dissertation offers a comprehensive exploration of the intricate relationship between fluctuations in oil prices and their profound impact on economic growth. By employing an extensive array of economic theories and empirical data analysis, this study unveils the multifaceted dimensions of this dynamic interaction. The introductory chapter sets the stage by presenting the historical context of oil price fluctuations, elucidating their pervasive impact on global economies, and revealing the intricate balance between geopolitical forces and oil market dynamics. A systematic review of economic theories, including Keynesian, neoclassical, resource curse, and energy transition theories, lays the foundation for understanding the mechanisms at play. These theories offer insights into both demand-side and supply-side effects, as well as the paradox of plenty and the imperative shift toward decarbonization. The comprehensive literature review section delves into the determinants of oil prices, the macroeconomic impacts of oil price fluctuations, sectoral sensitivities, investment dynamics, fiscal implications, and global trade dynamics. Critical reviews and identification of gaps in the literature pave the way for the conceptual framework. In the subsequent chapters, the dissertation unveils empirical findings that elucidate the mechanisms of transmission, bidirectional causal relationships, asymmetries, sectoral sensitivities, and policy insights, and explores the dynamics of energy transition. These findings serve as a pivotal guide for understanding the economic repercussions of oil price fluctuations. The concluding chapter presents a comprehensive set of recommendations for policymakers and stakeholders, outlining strategies for economic diversification, sovereign wealth funds, investment approaches, social safety nets, proactive adaptation to energy transition, data monitoring, research and development, and the significance of global cooperation. This dissertation presents a nuanced understanding of the impact of oil price fluctuations on economic growth, shedding light on the intricate interplay of these two pivotal elements in the global economic landscape.

Key Words: *Oil, Oil pricing, Oil price fluctuations*

PETROL FİYATLARINDAKİ DALGALANMALARIN EKONOMİK BÜYÜMEYE ETKİSİ: STRATEJİK BİR ANALİZ

ÖZET

Bu tez, petrol fiyatlarındaki dalgalanmalar ile bunların ekonomik büyüme üzerindeki derin etkileri arasındaki karmaşık ilişkinin kapsamlı bir incelemesini sunmaktadır. Kapsamlı bir dizi ekonomik teori ve ampirik veri analizi kullanarak yapılan çalışma, bu dinamik etkileşimin çok yönlü boyutlarını ortaya koymaktadır. İlk bölüm, petrol fiyatlarındaki dalgalanmaların tarihsel bağlamını ve küresel ekonomiler üzerindeki geniş kapsamlı etkilerini açıklayarak, jeopolitik güçler ile petrol piyasası dinamikleri arasındaki karmaşık dengeyi gözler önüne sermektedir. Keynesyen, neoklasik, kaynak laneti ve enerji geçişi teorileri de dahil olmak üzere ekonomik teorilerin sistematik bir incelemesi, oyundaki mekanizmaları anlamanın temelini oluşturur. Bu teoriler hem talep hem de arz yönlü etkilerin yanı sıra bolluk paradoksu ve karbondan arınmaya doğru zorunlu değişim hakkında da fikir vermektedir. Kapsamlı literatür taramasında, petrol fiyatlarının belirleyicileri, petrol fiyatlarındaki dalgalanmaların makroekonomik etkileri, sektörel hassasiyetler, yatırım dinamikleri, mali sonuçlar ve küresel ticaret dinamikleri incelenmektedir. Literatürdeki eleştirel incelemeler ve boşlukların tespiti kavramsal çerçevenin yolunu açmaktadır. Çalışmanın sonraki bölümlerinde, iletim mekanizmaları, çift yönlü nedensel ilişkiler, asimetriler, sektörel hassasiyetler ve politika öngörülerini aydınlatan ampirik bulgular ortaya konmaktadır. Bu bulgular, petrol fiyatlarındaki dalgalanmaların ekonomik yansımalarını anlamak için önemli bir kılavuz görevi görmektedir. Çalışmanın sonunda, sektör yöneticileri ve paydaşlar için ekonomik çeşitlendirme stratejileri, devlet varlık fonları, yatırım yaklaşımları, sosyal güvenlik ağları, enerji geçişine proaktif uyum, veri izleme, araştırma ve geliştirme ve küresel işbirliğinin önemini özetleyen kapsamlı bir dizi öneri sunulmaktadır. Bu çalışma, petrol fiyatlarındaki dalgalanmaların ekonomik büyüme üzerindeki etkisine ilişkin incelikli bir anlayış sunmakta ve küresel ekonomik manzaradaki bu iki önemli unsurun karmaşık etkileşimine ışık tutmaktadır.

Anahtar Kelimeler: *Petrol, Petrol fiyatlaması, Petrol fiyat dalgalanmaları*

1. INTRODUCTION

1.1 Introduction

Since the early discovery of oil in the 1800s, the product has been vitally important to the world economy. According to Painter (1986), the invention of the internal combustion engine was the major influence on the rise in the importance of oil. Hathaway (2009) noted that the importance of oil has risen to the extent that in a world suddenly without oil, all the major distribution systems that allow economic transactions on a more than local basis would fail, and the world economy would collapse.

According to British Petroleum (BP, 2012), the average global oil consumption in 2011 was 88.03 million barrels per day, and with the 2011 world population figures reported in the United Nations report (UN, 2012) at 7.022 billion people, it is roughly equivalent to every single person on the planet using two liters of oil a day. Along with this, the average nominal price of Brent crude for the first half of 2012 stood at $113.45,1 so the global consumption of oil cost almost $10 billion every single day or $1.42 for every person. Of course, the global distribution of oil consumption is not evenly spread as the advanced countries of the Organization of Economic Co-operation and Development (OECD) and oil rich countries consume far more oil than less advanced countries also, over the years, oil consumption has been declining 1Crude oil prices obtained from EIA (2012)

Oil prices and their attendant consequences on economic output remain an important issue confronting a growing number of world economies. The relationship between oil prices and the level of economic activity has been the subject of much attention for some time as there has been extensive empirical literature on the oil price-GDP relationship, covering the last three decades. Derby (1982) and Hamilton (1983) were among the early studies and they concluded that most economic recessions were preceded by a sharp rise in the price of oil. This notion over the

years weakened as later empirical studies shows oil prices having lesser influence on economic output.

The mechanisms through which oil price changes affect economic activity include both supply and demand channels.3 Despite the substantial research on the impact of oil prices on economic activity, the understanding of the transmission channels through which oil prices affect economic activity is far from a consensus. Moreover, the way oil prices influence the economy and the magnitude of their effects may have evolved through time. The mechanisms that were at work during the first two shocks in the 1970s are not necessarily the same today (since the beginning of the 2000s).

Oil has become the main source of foreign currencies in the economies of a large number of oil-exporting countries, and at the same time, it is a major resource on which the economies of oil-importing countries depend. Oil has contributed to an increase in the gross domestic product of oil-exporting countries due to higher oil revenues, which has helped boost government spending. May in this country and achieve economic growth, but it remains.

This growth is unsustainable because it is dependent on oil price fluctuations and oil price shocks. Global, such as the reverse shock in 1986, which resulted in a decline in economic growth of 1.19% on average. Annually for the period from 1986-1998, then followed by a sharp increase in 1999 It contributed to economic recovery and programs to support growth achieved tangible growth prospects and improved performance. Economic forecasts in oil-exporting countries, but these fluctuations remain dependent on developments in oil prices (Dahmani et al, 2020). This is what we will address in this study.

1.1.1 Background

Oil is a natural substance extracted from geological formations underground, in which it may accumulate through a slow process of transformation of organic materials that lasts for relatively long ages and epochs. Oil is chemically defined as a complex mixture of hydrocarbons. It varies greatly in appearance, color, and composition depending on where it is extracted. It is considered a natural raw material, and when it is extracted from under the surface of the earth, it is also called crude oil. The crude oil is subsequently subjected to a refining process to obtain

different types of petroleum products; That is, a technical fractional distillation process is performed on it, which enables it to be separated into a group of mixtures that are distinguished from each other by the boiling point gradations in the distillation tower. These groups are usually called “Qatfat”.

Crude oil is a naturally occurring substance that is found in widely differing amounts in various countries throughout the world. Oil is not used directly for any important purpose, rather it is refined and split into different products which are either used directly for final consumption or are in turn further processed. Different crude oils yield different proportions of these refined products, and since the value is related to the end uses, those crude oils yielding higher proportions of valuable by-products (petroleum motor spirit, diesel fuels, jet fuels, petroleum gas, etc) will tend to sell at a premium relative to other crude oils. According to EIA (2010), heavy crudes tend to sell at a discount because of the negative effects on the efficiency of the refining process.

A given crude oil price determined on a particular day varies by location and date of delivery. Since crude oil is expensive to transport (long distance trade has to take place since most of the major consumers produce little or no crude oil), the price at the point of production and at the point of import are quite different. Nakamura (2008), in a study of oil refining and markets, shows that the margin for transport cost, insurance and handling cost can be substantial as long hauls may take several weeks and holding large inventories can be very expensive. Therefore, firms facing uncertain future demand often wish to purchase 'forward' that is, to pay a price determined now for delivery later (e.g. in one month). Such a price can be quite different from the price for immediate delivery (spot) in the same market. However, over lengthy periods (using quarterly or annual average prices) the whole term structure of prices tends to move closely together.

Oil is classified as a type of fossil fuel because it is formed under the deep layers of the earth from large quantities of extinct organisms (fossils) such as zooplankton and algae, which were buried under sedimentary rocks and then decomposed in the absence of oxygen and high pressure and temperature below the surface of the earth. Oil is extracted from its underground reservoirs, which are called oil wells, by drilling the earth’s crust after conducting a geological survey to test the porosity and permeability of the geological reservoir. Oil is an important

source of primary energy, and therefore it is called “black gold” because of its high economic importance. Light harvests are mainly used in mixtures of automobile and aviation fuel, while heavy harvests are used in producing electrical energy, operating factories, and operating heavy machinery. Oil is also considered the primary raw material for many chemical industries with their various products, including fertilizers, pesticides, plastics, fabrics, and medicines. The Arab region, especially the Arabian Peninsula, is classified as one of the regions in the world's richest in oil reserves, and it is also the most productive and exporting of oil, which is usually transported by pipeline. Or by carriers. The rate of oil consumption and reliance on this raw material as a primary source of energy has increased steadily since the early twentieth century. Which prompted some to call that period the “Oil Age.” The price of oil plays an important role in global economic performance, but oil reserves are vulnerable to depletion and non-renewal, especially with the continuous approach of what is known as peak oil, which is the maximum rate of oil production in the world. This opened the door to searching for and developing new energy alternatives, such as renewable energy sources. The excessive use of oil and other fossil fuels has harmed the Earth's biosphere and ecosystem, as oil spills usually cause environmental disasters. Burning fossil fuels is one of the main causes of global warming. Oil has been known in one form or another since ancient times, but its importance has increased significantly since the middle of the nineteenth century, especially with the outbreak of the Industrial Revolution, the invention of the internal combustion engine, the spread of commercial aviation, and industrial progress in various sectors (Schertz, 2022).

The ancient peoples knew oil or its derivatives (from bitumen or asphalt) from the natural accumulations of oil ponds that seeped due to natural fracturing factors from the interior of the earth to its surface. According to the Greek historian Herodotus and Diodorus of Sicily, asphalt was used to build and rebuild the walls and towers of the city of Babylon. The use of petroleum materials was also common in the ancient Near East, such as the civilizations of Mesopotamia and the Kingdom of Persia. Especially in the operations of galvanizing ships, which is filling their grooves and between their boards by coating them with asphalt. The Chinese were among the first peoples to document the use of raw petroleum materials in daily life in the first century BC, as stated in the Book of Changes. The use of these materials

as a source of energy was known to them since the fourth century AD, and bamboo rods were also used primitively to obtain oil from surface wells. It is possible that the Romans used the oil available to them at that time to lubricate their carts. While the Byzantine Empire used petroleum derivatives in the early Middle Ages in the composition of Greek fire, which was used in wars as a flamethrower. Oil sands extraction began in Europe in the 18th century; Asphalt has also been found in Lower Saxony since that time; However, the coal industry and its extraction were prevalent at that time.

The petroleum industry began in the mid-nineteenth century thanks to the efforts of several explorers who tried to obtain hydrocarbon liquids from coal processing. Among the pioneers in this field are Canadian Abraham Gesner and American James Young. For example, in the mid-nineteenth century, chemist James Young noticed the presence of a natural pool of oil in an area in the British state of Derbyshire. He took samples from it and conducted a distillation process on them. He obtained a light extract that was suitable for use as fuel for his lamp, while the second extract was viscous. raised and used for lubrication; Based on this discovery, Young began his own project in refining hydrocarbons. Young was later able to distill some types of bituminous coal, obtaining a primary liquid that resembled petroleum in form, upon which he performed a subsequent slow distillation process that enabled him to obtain several useful liquids, including an oil that he called “paraffin oil,” because it freezes at temperatures Low, similar to paraffin wax. In the year 1850, Young issued a patent and founded with his companions a group of companies in West Lothian and Glasgow. As for the first oil refinery in the world in its actual sense, it was established in 1856 by Ignacy Lukasiewicz. He was able to obtain kerosene from the natural accumulations of oil ponds and contributed to the spread of lamps operating on petroleum derivatives, in addition to his contribution to oil construction. Over time, the global demand for petroleum derivatives began to increase to obtain a new source of lighting. At the same time, mechanical technologies witnessed progress that contributed to the development of the oil industry in several places in the world, as is the case in the contributions of Edwin Drake, for example, in developing it in the American state of Pennsylvania, as well as the contributions of James Miller Williams in extracting oil in Canada. As for Europe, Georg Honaeus’ contributions in the German Weitze region secured about

80% of German demand for oil in the late nineteenth century. Until production in Weitze stopped in 1963, and the production site became an oil museum since 1970. Russia also witnessed similar developments in oil well drilling in the mid-nineteenth century. Well drilling began to spread in different regions of Europe, such as Poland and Romania. The importance of obtaining oil resources increased at the beginning of the twentieth century, especially during the military conflicts that reached their peak in the First and Second World Wars (Gao, 2022).

Oil is the primary resource and main support for the economy in a number of countries in the world, which is then conventionally called “oil economy the prices (Guerriero et al, 2021). After the collapse of the OPEC pricing system in 1985, and the failure of the net return experiment (in which a barrel of oil was priced based on not considering the cost of production), oil-exporting countries adopted a pricing mechanism based on market demand. The Mexican Oil Company was the first to adopt the market-linked pricing mechanism in 1986, which gained increasing popularity until, in 1988, it became the primary method for pricing oil in global trade markets. Oil is priced based on reference standard blends such as brent crude, West Texas Intermediate crude, and Dubai-Oman crude.

Oil prices witnessed their first significant rise after the 1973 oil embargo during the October War. They remained high until the mid-1980s and then declined again before increasing steadily since the beginning of the twenty-first century, with the price of a barrel of oil reaching its highest price in the period between 2006 and 2013 (Robert, 2021).

Conventionally oil prices are quoted in US dollars per barrel whatever the point of delivery. According to Fattouh (2007), the oil pricing regime is based on formula pricing, in which the price of certain crude is set as a differential to a certain reference price. He outlined three crudes that have tended to be the reference points, which are explained below.

I. Arab Light (API 34°)8: This is crude produced in Saudi Arabia, the world's largest producer/exporter of crude oil. Ghanwar, is the primary producing field for Arab Light Crude and according to EIA (2011), Ghanwar is the world's largest onshore oil field with estimated remaining reserve of over 70 billion barrels. Since Saudi Arabia is a dominant producer, the price of this crude was seen as a key variable in the pricing strategy of the Organization of Petroleum Exporting Countries

(OPEC) and a representative of Middle Eastern production. According to Fattouh (2011), Arab Light prices have tended to be replaced by those of the similar Dubai Light (API 320) since the early 1990's as a representative crude price for Middle Eastern production. In June 2005, the new OPEC reference basket was introduced. It is currently made up of the following: Saharan Blend (Algeria), Girassol (Angola), Oriente (Ecuador), Iran Heavy (Islamic Republic of Iran), Basra Light (Iraq), Kuwait Export (Kuwait), Es-Sider (Libya), Bonny Light (Nige- ria), Qatar Marine (Qatar), Arab Light (Saudi Arabia), Murban (UAE) and Merey (Venezuela).

II. Brent Crude (API 38°): Brent crude is sourced from the North Sea. It is used to price two-thirds of the world's internationally traded crude oil supplies.10 According to Platts (2012), the current API gravity for Brent crude is estimated at 38 degrees and the sulphur content at 0.45%, hence it is classified as sweet crude. The nearness of the North Sea to major refining industries and large market of Northwest Europe, has given this crude a central role over the past two decades.

III. West Texas Intermediate (API 40°): This crude commonly referred to as WTI, serves as the reference point for the US market. WTI is light crude, lighter than Brent crude. According to Platts (2012), WTI contains about 0.3% sulphur and is rated as a sweet crude. WTI is expected to command a higher price than Brent crude - however, starting from late 2010, WTI began to sell at a discount due to rapid increases in crude oil production from tight oil formation." It is further reported that Brent has become more representative in the marginal cost of crude oil which led to the EIA in July 2012 to begin to publish Brent crude spot price forecast as against the WTI it normally used.

Fattouh (2007) argued that the oil market has undergone structural trans- formation that has placed oil prices on a new high path, which according to Fattouh (2007), is due to the emergence of new large consumers (such as China and India) and the geopolitical uncertainties in the Middle East - hence, the reaction of the oil market is generally in response to market fundamentals of supply and demand.

Oil prices have long been recognized as a critical determinant of economic performance for both oil-producing and oil-importing countries (Sarwar et al., 2017). The intricate interplay between oil prices and economic growth has garnered substantial attention from economists, policymakers, and researchers alike as Al-Maamary et al. (2017) explain. Fluctuations in oil prices can exert profound impacts

on various macroeconomic indicators, trade balances, fiscal policies, and investment decisions (Gbatu et al., 2017). This thereby shapes the overall trajectory of a nation's economic growth.

The figure below shows the economic impact on every 10% rise in oil prices in several countries.

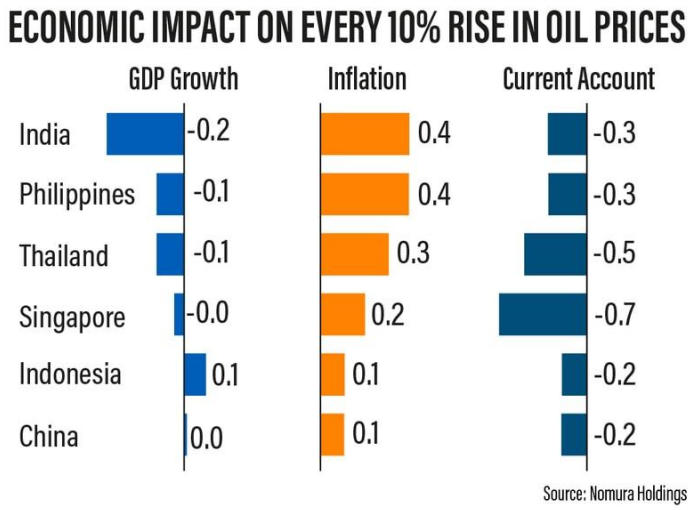

Figure 1.1: Economic Impact on Every 10% Rise in Oil Prices in Several Countries

Source: (Beckmann et al., 2020).

Meanwhile, the term peak oil appeared, a term developed by the scientist Hubert to indicate that global oil production will reach its peak one day and then fall at a rate similar to its rate of rise before the peak when the stock is exhausted. This principle is of great importance because of its major economic consequences. Although Hubbert established the principle since the late sixties of the twentieth century, oil production on average has been continuously increasing since the eighties of the twentieth century. The data that Hubbert relied on to make his guess varied over time, as oil exploration was limited at the time, and based on the data that was available to him, Hubbert guessed that peak oil would be around the year 2006. The International Energy Agency issued a statement in 2010 in which it stated that the year 2006 the peak of oil production from conventional sources was actually 70 million barrels per day, and then it fell slightly to 68 or 69 million barrels per day. Despite this, it can be said that oil production as a whole has not yet reached its peak, especially since it has shifted to a longer period with the development of unconventional oil discovery. It is not easy to accurately estimate the peak of oil in any region of the world due to the difficulty of calculating and estimating oil

reserves, especially with countries' secrecy. On accurately disclosing the strategic oil reserve; So it is correct to say that peak oil cannot be extrapolated, but is known after a noticeable decline in oil production (Slominski et al, 2019).

The historical narrative of the oil market is punctuated by substantial oscillations in price dynamics (Bashir et al., 2022). This is an intricate change that converges to shape the flow of supply and demand. There is great volatility inherent in oil prices and their far-reaching implications as Herrera et al. (2019) put forth. The events of the 1970's, notably the oil crises, serve as a quintessential example of how geopolitical tensions can act as catalysts for surges in oil prices (Sreenu, 2018). This pivotal era is emblematic of the underlying vulnerability of economies to the capricious nature of oil price fluctuations.

The 1970's oil crises resonate as a stark reminder of the delicate equilibrium that characterizes the oil market (Al-Sasi et al., 2017). Geopolitical tensions and supply disruptions converged during this era. This prompted escalating prices that reverberated across the globe. The profound interplay between politics and oil production vulnerabilities painted a landscape where the once-stable commodity transformed into a vehicle of economic turbulence (Odhiambo, 2020). These events serve as a poignant lesson on the intricate linkage between the world's energy lifeline and the intricate geopolitical tapestry.

The historical stage further unfolded during subsequent decades. These decades unveiled episodes of plunging oil prices (Beckmann et al., 2020). The 1980's and the early 2000's witnessed sharp declines in oil (Carpio, 2019). This echoed the underlying instability of the oil market. The echoes of these price plunges resonated through economies, underscoring oil's volatility. These instances formed integral chapters in the historical tome of oil price dynamics (Anjum and Malik, 2019). The instances offered a glimpse into the oscillating fortunes of nations tethered to this commodity.

The figure below shows US crude oil production from 1900-2011.

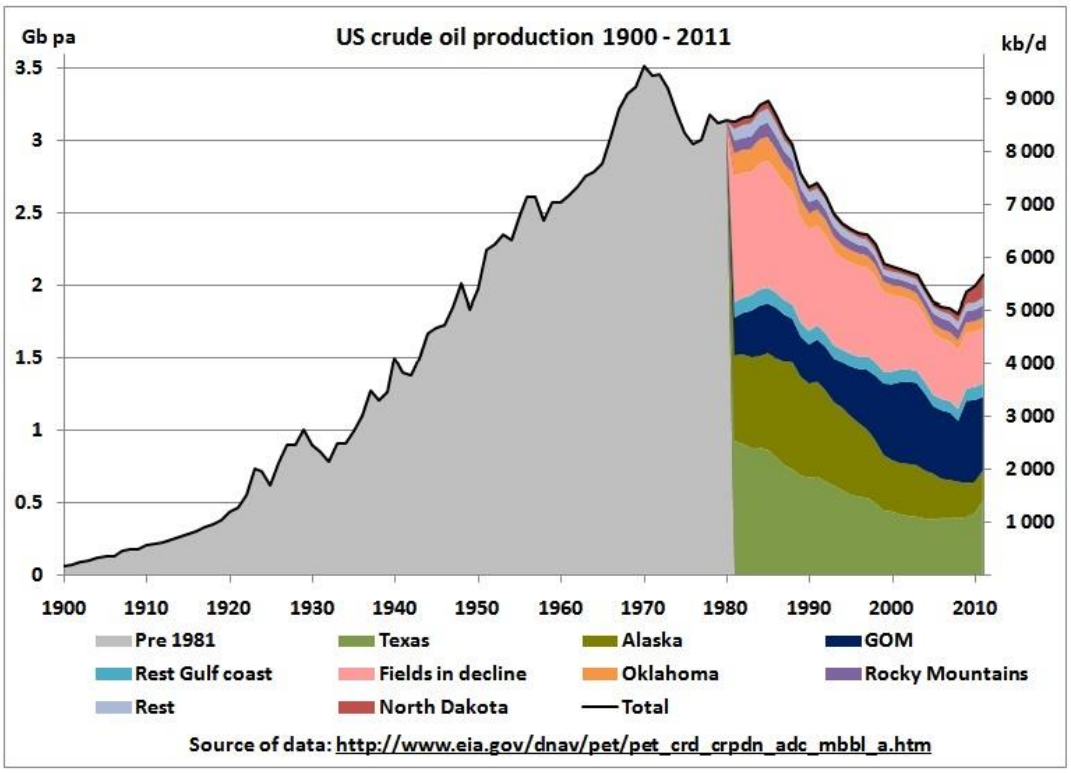

Figure 1.2: US Crude Oil Production From 1900-2011

Source: (Liu et al., 2019).

1.1.2. Oil supply, demand and prices in the long-term

Oil prices are influenced by a number of factors, including some such as speculation, that are mainly short-term impacts. Other factors such as OPEC production decisions and expectation about future world demand for oil affects prices in the longer term. Supply and demand in the world oil market are balanced through responses to price movements, and the factors underlying supply and demand expectations are numerous and complex. According to EIA (2012), the key factors determining long-term supply, demand and prices for petroleum and other liquids12 can be summarized in four broad categories: the economics of non-OPEC supply; OPEC investment and production decisions; the economics of other liquids supply; and world demand for petroleum and other liquids. OPEC's role is a critical factor in determining long-term oil supply because oil resource is only available in limited amount within a particular geographical distribution, and more than 70% of proved oil reserves are concentrated in the OPEC countries. Table 1.1 reports proved world oil reserves by regions, as it stands by the end of 1990, end of 2000 and end of 2010.

In 2010, almost 55% of global oil reserve is concentrated in the Middle East which makes the region quite essential, and of strategic importance for the future oil

supply requirements of the industrialized and other emerging economies. Out of the 752.5 billion barrels of oil reserve available in the Middle East in 2010, 264.5 billion barrels (or 35%) is situated in Saudi Arabia. Other countries with huge oil reserve in the region include Iran, Iraq and Kuwait all with a proved reserve of over 100 billion barrels of oil (See Appendix 1.2 for the individual country's oil reserve and oil consumption)

1.1.3 Oil's role in economic growth and development

Oil is an essential cornerstone of modern industrialization (DADA et al., 2022). It has played a pivotal role in shaping the trajectories of economic growth and development across the globe. Its multifaceted significance as an energy source has bestowed upon it an unparalleled influence that extends far beyond the confines of mere energy production. This comprehensive exploration delves into the intricate interplay between oil and the mechanisms underpinning economic growth and development.

Energy Foundation and Industrial Catalyst: At the heart of oil's influence lies its role as a fundamental energy source (DADA et al., 2022). The energy density and versatility of oil have facilitated the industrialization that has underpinned economic growth for centuries. The transformative potential of oil-powered machinery has elevated productivity levels in many states. It has also propelled economies towards new heights of output and efficiency.

Transportation Facilitator: The wheels of economic development turn on transportation networks. Oil has been a vital facilitator of this essential function (Liu et al., 2019). The advent of transportation machinery powered by oil-derived fuels has revolutionized trade, communication, and human mobility (Odhiambo, 2020). By diminishing distances and boosting connectivity, oil-infused transportation networks have catalyzed the expansion of markets. They have also brought about the integration of regional economies into the global framework.

Revenue Stream for Governments: For oil-rich nations, this commodity represents a potent revenue stream that can significantly bolster fiscal capacities (De et al., 2019). Oil-exporting countries have harnessed their petroleum resources to finance public expenditures. Oil also aids in developing infrastructure and investing

in education and healthcare. This confluence of resources has propelled the growth of these economies. It has enabled them to diversify their revenue base significantly.

Foreign Exchange and Trade Balance: Oil's strategic significance is mirrored in its role as a critical determinant of trade dynamics. For oil-exporting countries, the export of oil generates substantial foreign exchange (Degiannakis et al., 2018). This enhances their purchasing power and affords them the ability to import goods and technologies necessary for economic development. Oil-importing nations also navigate the intricate intricacies of the trade balance.

Innovation and Technological Advancements: The pursuit of oil has driven innovation and technological advancements. These innovations have rippled beyond the oil industry, permeating diverse sectors of the economy (Odhiambo, 2020). The synergistic relationship between oil production and technological progress has fueled a cycle of discovery. This, in turn, results in increased efficiencies, reduced environmental impact, and broader economic gains (De et al., 2019).

Environmental and Social Dimensions: The role oil plays also intersect with environmental and social considerations. As Degiannakis et al. (2018) explain, the extraction and consumption of oil have environmental repercussions. This includes air and water pollution and greenhouse gas emissions. Moreover, oil-rich economies often face challenges in managing the associated wealth, addressing income inequality, and diversifying their economies to ensure long-term sustainability.

Oil's role in economic growth and development transcends its status as a mere energy source. It embodies the essence of modernity, power, and progress. This shapes the contours of economies, industries, and societies (De et al., 2019). Therefore, a nuanced understanding of this intricate relationship becomes imperative.

The figure below shows why oil prices matter to the globe’s economy.

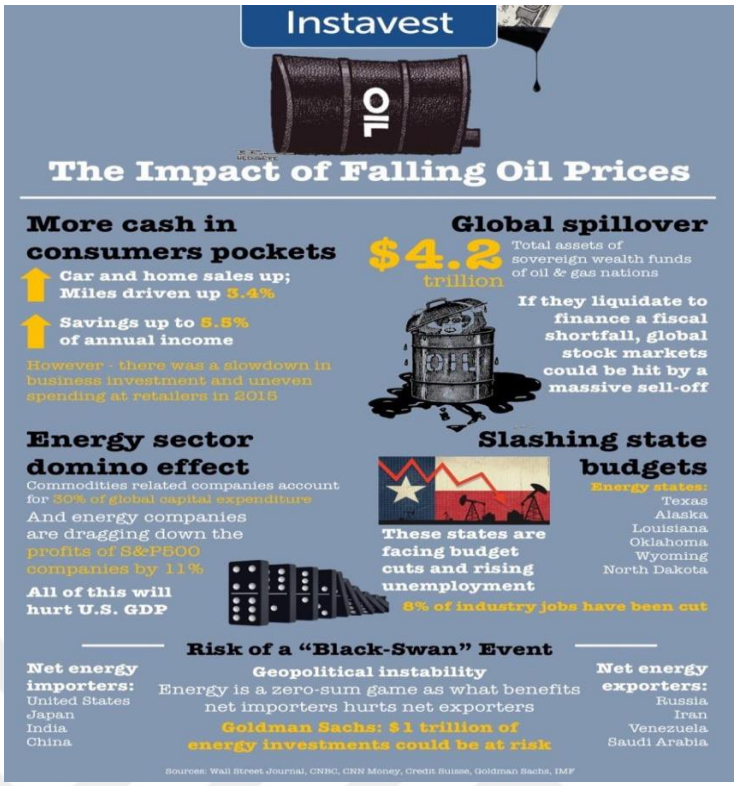

Figure 1.3: Effects of Oil on Economy

Source: (Mezghani and Haddad, 2017).

1.1.4 Fluctuations in oil prices

Fluctuations in oil prices constitute a critical facet of the global economic landscape (Mezghani and Haddad, 2017). This wields profound repercussions for both producing and consuming nations. These fluctuations, often characterized by volatile shifts in the valuation of crude oil, are fundamentally driven by a confluence of complex factors. The factors include:

Geopolitical Factors: The geopolitical theatre exerts a substantial influence on oil prices (Fatma, 2019). Instances of political instability in major oil-producing regions can trigger supply disruptions and send shockwaves through global oil markets. For instance, geopolitical tensions in the Middle East have historically precipitated spikes in oil prices. This is because market participants grapple with the uncertainty surrounding future supply availability (Odhiambo, 2020).

Supply and Demand Dynamics: The fundamental law of supply and demand exerts a significant gravitational pull-on oil price (Kilian, 2017). Variations in global oil production intersect with shifts in global economic growth and industrial activity. As economies expand, energy consumption escalates. This drives demand

for oil. Conversely, during periods of economic recession, demand may reduce. This leads to surplus supply and, in turn, pressure on oil prices.

Technological Advancements and Energy Transition: Technological advancements play a pivotal role in reshaping the oil landscape (He et al., 2022). Innovations in oil exploration and extraction techniques can influence production capacities. Additionally, the emergence of alternative energy sources, such as renewables and electric vehicles, has the potential to alter the demand trajectory for oil (Al-Sasi et al., 2017). This introduces a layer of complexity to price dynamics.

Market Sentiment and Speculation: Psychological and speculative factors contribute to the volatility of oil prices. Investor sentiment can lead to amplified price swings (Fankhauser and Jotzo, 2018). This sentiment is influenced by macroeconomic indicators, global events, and financial market trends. Furthermore, speculation on future oil price movements by market participants can create self-fulfilling prophecies, leading to price volatility (Sreenu, 2018).

Macroeconomic Influences: The health of the global economy plays a substantial role in shaping oil price fluctuations as Roman et al. (2020) explain. Economic growth, industrial output, and consumer spending directly impact oil demand. Economic downturns can trigger a decrease in demand. This leads to an oversupply of oil and resultant price declines.

Environmental and Regulatory Pressures: Environmental concerns and regulatory actions also influence the oil market (Kallis and Sager, 2017). Stringent emissions regulations, climate change policies, and shifts towards cleaner energy sources can impact the long-term demand outlook for oil. This potentially affects prices.

The figure below shows factors that affect oil prices globally.

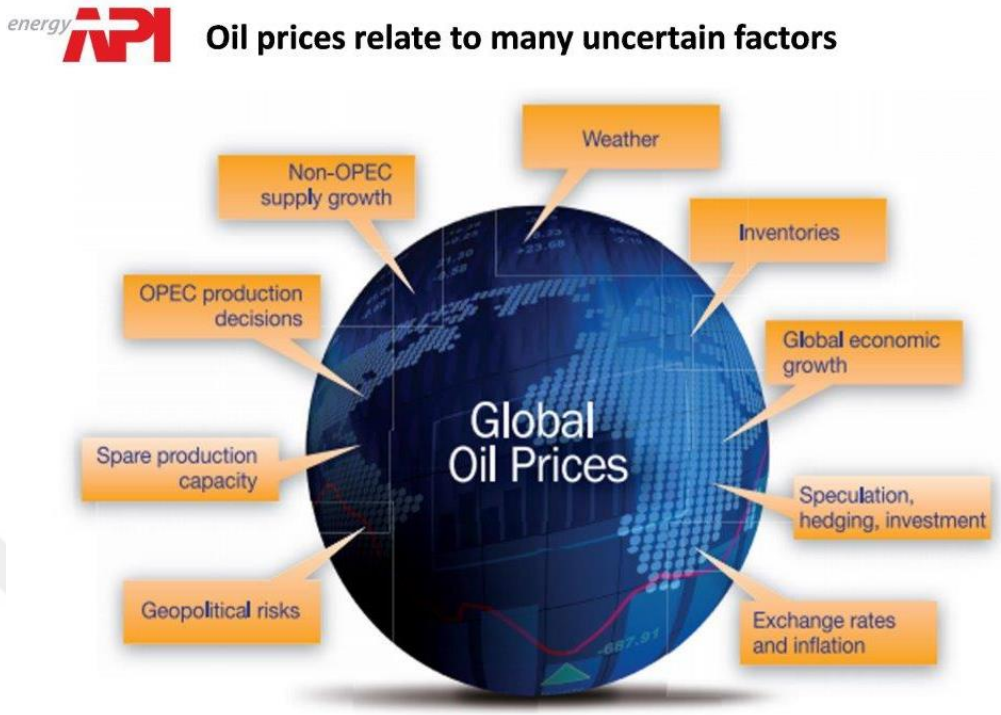

Figure 1.4: Factors That Affect Oil Prices Globally

Source: (Abdelsalam, 2020).

1.1.5 Transmission mechanisms: The intricate web of oil price fluctuations on economic growth

To unravel the intricate influence of oil price fluctuations on an economy and its overarching impact on economic growth, one must embark on a comprehensive exploration of the multifaceted transmission mechanisms that elegantly interlace through a tapestry of sectors:

Input Costs and Production Dynamics: Oil's role transcends that of a mere commodity; it's the foundational cornerstone underpinning contemporary production processes across manufacturing and transportation industries (Alley et al., 2014). The undulating tide of oil price fluctuations surges through enterprises. This translates into mounting costs for oil-derived inputs. This financial squeeze chips away at profit margins, forging a quandary that constricts the horizons of investment and growth (Herrera et al., 2019). This interplay encapsulates a dynamic where both large conglomerates and nimble startups find their economic vibrancy stifled.

Consumption Patterns and Spending Behavior: The upward trajectory of oil prices reverberates within the intimate domains of households. Consequently, the

allocation of financial resources to other facets of consumption dwindles (Abdelsalam, 2020). This casts a shadow over the intricate move of demand dynamics. This shift in spending behavior orchestrates a complex composition where economic activity finds itself disrupted.

Inflation and Monetary Policy: When oil prices rise a lot, it affects how things are made and sold in different industries (Ftiti et al., 2016). This can lead to inflation. To handle this, policymakers need to make careful decisions. They need to try to balance things by making borrowing and investing a bit harder (Bashir et al., 2022). This interaction between their decisions and the economy's growth needs to be balanced.

Trade Balance and Currency Dynamics: The global stage becomes a canvas upon which oil-importing economies contend with the sweeping effects of heightened oil prices (Ederington et al., 2019). As oil import costs ascend, trade imbalances manifest, and currencies sway in response to the ever-shifting global economic tide. The intricate shift of trade dynamics paints a vivid portrait of the intricate interdependencies that underlie international economies.

Economic Impacts of Oil Price Fluctuations on Government Finances: In countries heavily reliant on oil exports, their financial health is closely tied to the movement of oil prices. The rise and fall of these prices create a coordinated pattern where government revenues rise and fall together (Longe et al., 2021). This rhythmic pattern prompts governments to make careful adjustments to their financial plans. These adjustments are reflected in changes to fiscal policies – a subtle dance where governments navigate between adopting more careful financial approaches and more expansive ones. This intricate interaction of government strategies weaves through the overall pattern of economic growth, playing a crucial role in shaping its direction (Gbatu et al., 2017).

Investment Attitudes and the Influence of Uncertainty: The inherent unpredictability inherent in oil prices introduces a sense of mystery to the investment landscape (Zheng and Du, 2019). This aura of uncertainty is particularly pronounced within industries closely linked to oil. For instance, the energy and petrochemical sectors. This uncertainty leads to a careful approach to investments (Al-Maamary et al., 2017). This is a tendency to be cautious due to the unpredictable nature of oil prices. This cautious stance has the potential to influence the direction of capital

investment. This, in turn, can initiate a chain reaction that spreads through the wide expanse of economic growth.

Income Inequality and the Burden of Vulnerability: The impact of oil price shocks is felt most intensely within low-income households (Bashir, 2022). In these homes, the amplified effect of higher fuel and necessities costs imposes a disproportionately heavy burden on financial stability. These effects ripple through the structure of income distribution, magnifying the divides between different levels of earnings (Sarwar et al., 2017). This far-reaching impact has the potential to widen these gaps, intensifying the distinctions among income groups and potentially increasing the prevalence of poverty. Within this intricate landscape, this research aims to explore how changes in oil prices influence overall economic growth.

1.2 Problem Statement and Motivation behind the Research

The interplay between oil prices and economic growth has captivated the attention of economists, policymakers, and researchers for decades, igniting a pursuit to comprehend the intricate dynamics underpinning this relationship (Beckmann et al., 2020). The volatility in oil prices, characterized by abrupt fluctuations and sustained periods of unpredictability, presents a formidable challenge to economies worldwide. Understanding the intricate mechanisms through which these price fluctuations influence economic growth is not only a scholarly endeavor but also holds significant implications for policy formulation and strategic decision-making at the national and global levels.

The volatility of oil prices has repeatedly demonstrated its potential to disrupt economic stability and stymie growth trajectories (Carpio, 2019). The historical events of oil price shocks, such as those witnessed during the 1970's oil crises and the more recent upheavals triggered by geopolitical tensions, underline the vulnerability of economies to external forces that drive oil price swings. The repercussions of these price shocks ripple through various economic sectors, affecting production costs, consumer spending patterns, inflation rates, trade balances, and government revenue streams (Anjum and Malik, 2019).

Moreover, the global energy landscape is undergoing a transformation characterized by increasing emphasis on renewable energy sources and sustainability.

The evolving energy transition raises questions about the long-term trajectory of oil demand and the potential implications for oil prices. As economies shift towards cleaner energy alternatives, the intricate relationship between oil prices and economic growth gains new dimensions. This transition is further influenced by global efforts to combat climate change, resulting in shifts in energy policies, regulatory frameworks, and technological advancements that could amplify the complexities of the oil-economic growth nexus (DADA et al., 2022).

It has become established that the pricing of crude oil is based on principles that are completely different from the principles that determine the prices of other industrial or agricultural products. Therefore, practical reality has proven the invalidity of the attempt to determine oil prices according to supply and demand factors, for reasons including the incorrectness of considering the petroleum market a free market, and that prices reflect supply and demand. This is because the petroleum market is governed by quasi-monopolistic factors at all stages. Therefore, supply and demand are subject to various types of controls and restrictions. At the same time 3. Oil prices are exposed to rapid change depending on changes in local events or international developments. Therefore, relying on oil pricing on fixed traditional foundations becomes useless if circumstances change.

The final demand for petroleum is derived from the demand for petroleum products and derivatives. Also, the demand for these products in the main consumer markets determines the final price of crude oil. It is worth noting that most oil pricing theories ignore this fact. Also, the final demand for oil, and therefore the elasticity of demand for it, depends on its multiple uses. Each of these uses has special flexibility depending on the availability of alternatives.

Therefore, oil is not an ordinary commodity subject to conditions of free competition and average production costs, but oil is an exhaustible asset, and its supply is limited, at least in the short and medium term. Therefore, this unique situation of petroleum makes the price of petroleum high because the price includes what is called Scarcity Rent, and this rent rises over time due to the increasing scarcity of petroleum as the rate of its extraction increases. The price of oil will continue to rise over time to allow scarcity rents to increase at rates at least equal to the prevailing market interest rate.

In fact, it is not true that raising crude oil prices has had a negative and permanent impact on the economies of consuming countries, whether industrialized countries or developing countries that import oil. If there is an impact on the balance of payments, it is only in the short term. This effect soon fades away after a few years, due to the positive impact caused by the circulation of money from oil-producing countries to industrial countries and developing countries.

Given these multifaceted dynamics, this research aims to delve deep into the intricate web connecting fluctuations in oil prices and economic growth. By deciphering the transmission mechanisms, causal relationships, and potential asymmetries in this relationship, this study endeavors to provide a comprehensive and nuanced understanding of the interplay. The insights garnered from this research hold paramount significance for policymakers seeking to foster resilient economies capable of withstanding oil price shocks, as well as for businesses strategizing in an environment marked by energy transition uncertainties.

In sum, the problem statement encapsulates the imperative to unravel the convoluted connections between oil price fluctuations and economic growth (Liu et al., 2019). The motivation behind this research stems from the dire need to equip economies with knowledge that empowers them to navigate the volatile terrain of oil markets, enabling them to make informed decisions, devise effective policies, and orchestrate strategies that usher in sustainable and robust growth trajectories amidst the prevailing uncertainty.

1.3 Aim of the Study

The overarching aim of this thesis is to conduct a comprehensive and meticulous analysis of the intricate relationship between fluctuations in oil prices and economic growth.

1.4 Research Objectives

The study's objectives are as follows:

1. Analysis of financial sustainability considering fluctuations in crude oil prices in the international market.

2. Analysis of economic conditions considering fluctuations in crude oil prices in the international market.

3. The significance of the interaction of the two financial policies in light of the fluctuations in crude oil prices in the international market.

4. To analyze the transmission mechanisms through which fluctuations in oil prices influence economic growth.

5. To empirically investigate the causal relationships between fluctuations in oil prices and economic growth.

6. To uncover potential asymmetries and nonlinearities in the relationship between oil price fluctuations and economic growth.

7. To assess the varying sensitivities of distinct economic sectors to fluctuations in oil prices.

8. To provide meaningful policy insights by synthesizing the findings regarding the interaction between oil prices and economic growth.

9. To navigate the dynamics of the ongoing global energy transition

1.5 Research Questions

- What are the specific mechanisms by which changes in oil prices propagate throughout an economy, impacting various sectors and ultimately shaping economic growth patterns?
- Is there a statistically significant causal relationship between fluctuations in oil prices and subsequent changes in economic growth, and can the direction of causality be determined?
- Do the effects of oil price fluctuations on economic growth exhibit asymmetrical patterns, and are there instances where the relationship between these variables deviates from linear trends?
- How do different economic sectors demonstrate varying levels of susceptibility to changes in oil prices?
- What actionable policy insights can be drawn from synthesizing the empirical evidence on the interplay between oil prices and economic growth?

- How do fluctuations in oil prices interact with the dynamics of economic growth, especially amidst the shifting priorities towards renewable energy sources and evolving environmental considerations?

Research Methodology:

The research relies on inductive and deductive approaches in determining the impact of crude oil price fluctuations.

In financial policy.

1.6 Scope of the Study

The extent of the current review, suitably named "The Impact of Variances in Oil Costs on Financial Development," is carefully custom-made to envelop the diverse relationship between the motions in oil costs and the direction of monetary development. This study is intensely conscious of the need to portray the limits inside which it works and consequently considers different basic aspects and boundaries that shape its analytical boundaries.

The topographical extent of this study is expansively worldwide in nature, exemplifying both oil-delivering and oil-bringing in nations across a different range of locales. The reasoning fundamental this far-reaching approach is to gather experiences that reverberate with economies set apart by shifting monetary designs, levels of advancement, and energy conditions. Through this all-encompassing focal point, the examination attempts to catch the comprehensive repercussions of oil cost vacillations on the woven artwork of financial development.

The worldly structure embraced by this study leaves from the extraordinary 1970’s and stretches out to the current age, embodying ages accentuated via milestone oil cost shocks, international resonations, monetary transformations, and the surprising rising of imaginative energy advancements. This picked worldly vista works with a sweeping investigation of verifiable points that have shaped the oil market's direction, close by a wise submersion into late elements and the continuous worldwide energy change. This enveloping transient material proffers a sharp point of view on the transformative pathways of this intricate relationship.

Key to this study's center is the far-reaching transaction between the recurring patterns of oil costs and the unfurling story of financial development. This central

point envelops observational examination of the adjustments in key macroeconomic markers, remembering the motions for Gross domestic product development rates, expansion directions, and joblessness patterns. Besides, the examination jumps personally into the movement between oil costs and different areas that comprise an economy's environment. This comprehensive scene typifies areas as different as assembling, transportation, exchange, speculation, and government incomes, empowering a granular evaluation of how oil cost undulations saturate through these shifted areas, eventually impacting the ensemble of monetary development.

1.7 Significance of the Research

The meaning of this examination, named "The Impact of Changes in Oil Costs on Financial Development," reverberates significantly inside the areas of the scholarly community, strategy detailing, and monetary talk. The multi-layered aspects and thorough examination intrinsic to this study incite an embroidery of importance that stretches out past its nearby degree. This study tries to enhance the scholastic scene by digging into the connection between oil cost elements and financial development. By analyzing the different aspects that support this mind-boggling nexus, the exploration contributes a complete layer of understanding to the more extensive monetary writing, subsequently enhancing hypothetical systems and observational bits of knowledge.

The discoveries of this study offer significant bits of knowledge for policymakers who wrestle with the difficulties presented by oil cost instability. An extensive comprehension of the transmission instruments and effects of oil cost changes on financial development furnishes policymakers with the information important to planning powerful systems that moderate dangers, upgrade flexibility, and profit by opening doors.

As economies explore a period of advancing energy scenes, the examination's investigation of the interaction between oil cost elements and monetary development expects central significance. The experiences got from this study can possibly direct economies toward practical development directions, especially considering moving needs toward sustainable power sources and natural contemplations. The thorough assessment of how unmistakable areas answer changes in oil costs can direct industry pioneers in conceiving hearty business systems. A top to bottom understanding of the

shifting awarenesses across areas can support enhancement, supporting methodologies, and transformation measures, cultivating strength notwithstanding unpredictable oil markets.

The examination's investigation of the collaboration between oil cost changes and the continuous worldwide energy progress tends to a basic worry within recent memory. By investigating how oil cost elements cross with the force toward environmentally friendly power sources, the review adds to forming the discourse and activities driving the change to a more manageable energy worldview.

The review's bits of knowledge give important ammo to financial backers and monetary foundations exploring the landscape of oil-subordinate business sectors. By grasping the connection between oil cost elements and financial development, financial backers can settle on additional educated choices and devise risk executives' techniques that align with winning monetary circumstances.

A thorough understanding of the effects of oil price fluctuations on income distribution and poverty enables policymakers to formulate targeted interventions that alleviate the potential exacerbation of socioeconomic disparities during times of oil market volatility.

In summation, the significance of this research resonates in its potential to influence academic discourse, policy formulation, economic development strategies, investment decisions, and the global energy transition. By shedding light on the multifaceted interactions between fluctuations in oil prices and economic growth, this study aspires to contribute to informed decision-making processes that resonate at global, national, and local levels, ultimately fostering economic resilience, sustainability, and prosperity.

2. LITERATURE REVIEW

2.1 Theoretical Review

This chapter embarks on a comprehensive theoretical review to irradiate the intricate relationship between fluctuations in oil prices and economic growth. Drawing upon renowned economic theories, this review aims to provide a solid theoretical foundation for understanding the mechanisms, impacts, and dynamics that govern this complex relationship. Four widely known and influential theories are explored in detail: the Keynesian theory, the Neoclassical theory, the Resource Curse theory, and the Energy Transition theory.

2.1.1 Keynesian theory: Demand-side effects and business cycles

This theory was founded by the British economist John Maynard Keynes. This theory focuses on the role of both the public and private sectors in the economy, that is, the mixed economy, where Keynes disagrees with the free market (without state intervention), that is, with state intervention in some areas.

In his theory, he believes that macroeconomic trends largely determine the behavior of individuals at the microeconomic level. He, like many classical economists, emphasized the role of aggregate demand for goods and that this demand has a major role in the economy, especially in periods of economic recession, as he believes that through... Aggregate Demand The government can fight unemployment and Depression, especially during the Great Depression.

He believed that the economy did not naturally tend towards full employment according to the principle of the invisible hand, as the classics believed, and he often contented himself with thanking the economist Smith for his writings.

The modern employment theory strongly contradicts the classical theory, as the modern theory believes that the capitalist economic system does not contain a guarantee of achieving full employment, and that the national economy may seek to achieve a balance in national output despite the presence of large unemployment or

severe inflation. The situation of full employment, accompanied by relative stability in prices, is according to the theory. Al-Kanzi is an occasional condition and is not a permanent occurrence (Bernanke, 2015).

Macroeconomics is the study of factors that apply to the entire economy, such as the general price level, interest rate, and employment level (or equivalent income or output measured in real terms).

The classical practice in partial equilibrium theory has been to divide the economy into separate markets so that each equilibrium condition can be stated as a single equation defining a single variable. The theoretical model of demand and supply curves developed by Fleming Jenkin and Alfred Marshall provided a unified mathematical basis for this approach, which the Lausanne School generalized to general equilibrium theory.

The partial theories associated with macroeconomics were: the theory of the quantity of money that determines the price level, the classical theory of the interest rate, and the situation referred to by Keynes in relation to employment, which represents the first hypothesis of classical economics and states that the wage is equal to the product, which is a direct application of the marginal principles developed during the 19th century (see “General Theory”). Keynes sought to replace all three aspects of classical theory (William, 2015).

Although Keynes's work took shape before the Great Depression, it was part of a long economic debate about the existence and nature of the abundance of public goods. Keynes advocated a number of policies to address the Great Depression (particularly government deficit spending in times of low private investment or consumption), and proposed several theoretical ideas (effective demand, multiplier, and the savings dilemma) introduced by several authors in the 19th and early 19th centuries. Twenty. Keynes's unique contribution was to provide a general theory of all this that proved acceptable to the economic establishment.

The underconsumption theories of John Law, Thomas Malthus, the Birmingham School of Thomas Atwood, and the American economists William Truvant Foster and Waddell Cushing (who were influential in the 1920s and 1930s) formed the foundations of Keynesian economics.

Many concepts were developed early and independently of Keynes by the Stockholm School during the 1930s, and these advances were described in a 1937 article in response to the 1936.

General Theory;

John Robertson mentioned in his book "The Savings Dilemma" in 1892 in its initial form that commercial economists had been developing since the sixteenth century in his book The Fallacy of Savings. John Maynard Keynes put forward the ideas that became the basis of Keynesian economics in his major book, The General Theory of Employment, Interest, and Money in 1936. The book was written during the Great Depression when unemployment had risen to 25% in the United States and reached 33% in some countries. His book is almost entirely theoretical and interspersed with passages of criticism and social commentary. The book profoundly influenced economic thought, and there has been debate about its meaning since its publication. Keynes began the General Theory with a summary of the classical theory of employment, which he mentioned in his formulation of Say's Law in which he introduced the dictum "supply creates its demand" (Bernanke, 2015).

According to classical theory, the wage rate is determined by the marginal productivity of labor if many people are willing to work at that rate. Unemployment may arise through friction or it may be voluntary: it arises from refusal to work due to legislation or social practices...or simply human refusal and stubbornness. But the classical hypotheses do not recognize the third category, which Keynes defines as involuntary unemployment.

Keynes raised two objections to the classical theory's assumption that “wage bargains determine the real wage.” The first lies in the fact that “work provides for a money wage rather than a real wage within certain limits.” The second is the assumption of the classical theory that: “The real wages of labor depend on the wage bargains that workers make with the businessmen,” while “if money wages change, we would expect the classical school to say that prices will change in approximately the same proportion, causing the real wage and the level of unemployment to return to what they were.” before".

Saving is the part of income not allocated to consumption, and consumption is the part of spending not allocated to investment. Saving thus includes the accumulation of income as cash and the purchase of long-term goods.

Rejecting the classical theory that unemployment arises because of high wages, Keynes proposed an alternative based on the relationship between saving and investment. In his view, unemployment arises when entrepreneurs' incentive to invest fails to keep pace with society's tendency to save (propensity being one of Keynes's synonyms for demand). The levels of saving and investment are equal and therefore income remains below a level where the desire to save is no greater than the incentive to invest.

The incentive to invest arises from the interaction between the material conditions of production and expectations of future profit, but once these are present the incentive is independent of income and depends only on the rate of interest r. Keynes defined its value as a function of r within the capital efficiency table.

The tendency to save is a completely different form. Saving is simply that portion of income that is not allocated to consumption:

“The prevailing law seems to be that when aggregate income increases, consumer spending will also increase, but within limits.”

Keynes added, “This law was extremely important for intellectual development” (David, 2015).

Fluctuations in oil prices are acknowledged as a pivotal catalyst within the Keynesian paradigm, exerting a potent influence on the demand side of the economic equation. The theory contends that alterations in oil prices can induce substantial shifts in consumer behavior and corporate decision-making (Palley, 2015).

When oil prices ascend, a chain reaction is set into motion. The immediate consequence is a contraction in household spending power, a phenomenon primarily attributed to the augmented costs of energy consumption (Schoder, 2017). The higher expenditure on energy siphons away a portion of disposable income, effectively curtailing the financial capacity of consumers to engage in discretionary spending on goods and services. As a direct result, the demand for products and services experiences a decline, casting a shadow over the engine of economic activity (Chatziapostolou, 2019).

The consequences of reduced consumer spending resonate far beyond individual households (Kim, 2020). Businesses, the cogwheels of economic machinery, find themselves grappling with diminished demand for their products. The ensuing contraction in sales precipitates a scenario where corporate profitability is dented, thus compelling firms to adopt a cautious approach to investment (Palley,

2015). With subdued consumer demand, businesses are inclined to reevaluate their growth prospects, often resulting in delayed or scaled-down investment initiatives. The repercussions of such decisions reverberate through the labor market, potentially stifling job creation and impeding employment opportunities (Chatziapostolou, 2019).

Conversely, in the realm of declining oil prices, a distinct narrative unfolds. Consumers are afforded a respite from the burden of elevated energy costs, bestowing upon them an augmented level of disposable income (Chatziapostolou, 2019). The consequent surge in purchasing power generates a positive feedback loop, kindling consumer spending and igniting economic growth. This heightened consumer activity translates into increased demand for a significant number of goods and services, thereby catalyzing production and propelling economic activity forward (Schoder, 2017).

Moreover, the expansive ripples of declining oil prices are not confined to the domain of consumer spending. Businesses, affected by the burden of inflated production costs, find themselves operating in a more conducive environment (Palley, 2015). The reduced energy expenses directly translate into lowered production costs, creating an environment that is conducive to investment and expansion. The resulting phenomenon is characterized by a cycle of virtuous growth, wherein increased investment leads to enhanced production, thereby fostering job creation, consumer spending, and overall economic prosperity (Kim, 2020).

In essence, the Keynesian theory paints a comprehensive portrait of the interplay between fluctuations in oil prices and the contours of economic growth (Abbass et al., 2022). The demand-side effects it elucidates underscore the potential for oil price dynamics to orchestrate significant shifts in consumer behavior, business strategies, investment patterns, and, by extension, the trajectory of an economy's growth cycle.

2.1.2 Neoclassical theory: Supply-side factors and efficiency

Inside the records of financial hypothesis, the Neoclassical point of view arises as a foundation that disentangles the connection between changes in oil costs and the fundamentals of monetary development. Established in standards of judiciousness, market balance, and asset portion, the Neoclassical hypothesis places that the exchange of supply-side variables is an essential determinant of an

economy's direction (Rahman, 2022). The Neoclassical system puts specific accentuation on the components through which varieties in oil costs resonate across the stockpile side scene, causing impacts that saturate creation processes, speculation choices, and asset distribution procedures (Casson, 2018). At center lies the statement oil cost variances bear the possibility to create a significant shaded area over the mantle of financial effectiveness.

At the point when oil costs rise, a flood of supply-secondary effects unfurls, hastening shifts in the elements of creation and asset designation (Dirani and Ponomarenko, 2021). The height in oil costs converts into expanded creation costs for organizations dependent on oil-concentrated inputs. The sign of this cost-push peculiarity presents an essential layer of intricacy, as the expenses related with creation echo through supply chains and cast a shadow over the economy's general productivity. The outcome of this supply-side bending is the possible shortening of total stock (Odhiambo, 2020). This is a situation described by diminished result and creation limits.

The influence of oil cost elements additionally, envelops venture choices that apply critical impact over financial development directions. The unpredictability inborn in oil costs conceives a climate of vulnerability, wherein organizations are constrained to wrestle with the unusual undulations of future expenses (Usher, 2022). This vulnerability demands a cost for the certainty of organizations, creating a shaded area over their readiness to take part in long-haul venture drives. The phantom of possible expense accelerations, driven by unpredictable oil cost developments, poses a potential threat, provoking organizations to take on a wary methodology towards committing assets to broadened adventures. This venture hesitance results in an exhaustive scene where a lack of strong, forward-looking speculation projects might hamper monetary development.

On the other hand, during periods described by stable or declining oil costs, a differentiating situation arises, offering experiences into the groundbreaking capability of supply-side elements. The lessened ghost of cost instability mollifies the worries of organizations, cultivating a climate where venture attempts can thrive (Usher, 2022). Enterprises that depend vigorously on energy-concentrated processes are specially prepared to receive the benefits of stable or declining oil costs, as the decreased information costs invigorate speculation hunger. This arrangement of venture impetuses with energy-escalated areas lights a temperate pattern of

development, wherein expanded speculation induces improved creation, eventually driving monetary execution vertical (Odhiambo, 2020).

The neoclassical theory casts a spotlight on the choreography between fluctuations in oil prices and the labyrinthine realm of supply-side dynamics (Dirani and Ponomarenko, 2021). Its focal lens dives deep into the mechanisms through which oil price variability can exert influence over production costs, investment decisions, and the allocation of resources (Casson, 2018). Within the complexities of economic growth within a volatile energy landscape, the Neoclassical perspective adds a layer of comprehension that enriches our understanding of the ramifications of supply-side factors, efficiency, and investment incentives within the context of oil price fluctuations (Rahman, 2022).

2.1.3 Resource curse theory: Paradox of plenty and economic diversification

The Asset Revile hypothesis is a scholarly structure that carefully explores the nexus between economies dependent on the exportation of regular assets, especially oil, and the bewildering mysteries that this reliance causes (Badeeb et al., 2017). While the blessing of normal assets guarantees the charm of significant incomes, the Asset Revile hypothesis reveals the underside of weakness that goes with this overflow, illuminating the connection between asset trades and monetary turn of events (Rahim et al., 2021).

The substance of the Asset Revile hypothesis lies in its statement that economies fastened to the product of normal assets, like oil, may wind up caught in a complicated trap of unfriendly results that impede as opposed to work with monetary development (Gilberthorpeand, 2019). The essence of this appears through the changes of oil cost variances. The hypothesis sets that bonus acquires gathered during times of taking off oil costs might come up short on expansion important to go about as a rampart against misfortunes during times of steep cost declines (Manzano and Gutiérrez, 2019).

The high points and low points in the costs of oil can lead to huge issues for nations that depend vigorously on their regular assets (Gilberthorpeand, 2019). At the point when oil costs go up, these nations get truckload of cash from selling oil. In any case, this can really hurt their economy over the long haul. The issue is that when they see all that cash rolling in from oil, they frequently disregard creating different

businesses (Gilberthorpeand, 2015). They become too centered around oil and overlook other significant region of their economy. This makes their economy extremely subject to oil, and assuming that oil costs drop abruptly, their economy endures.

At the point when oil costs go all over a great deal, it makes the issue of the Dutch infection far more detestable (Manzano and Gutiérrez, 2019). The consistent replaces in oil costs make it difficult for different ventures to develop and flourish. In this way, these nations end up adhered between attempting to enhance their economy and being maneuvered once more into relying upon oil. This doesn't simply influence their economy; it likewise influences the prosperity of their public overall (Rahim et al., 2021).

2.1.4 Energy transition theory: Decarbonization and structural shifts

During the moving ideal models, the Energy Change hypothesis arises as a guide of knowledge, relating to cleaner and more supportable energy scenes (Rose, 2016). Inside this story, the hypothesis explores the direction of a world wrestling with natural objectives including the worldview molding element that is oil. As this walk towards decarbonization unfurls, the variances in oil costs join with the more extensive story of energy change (Chilvers and Longhurst, 2016). This gives the force towards the reception of sustainable power.

At the core of the Energy Progress hypothesis lies the affirmation of a shift that rises above conventional energy ideal models (Essletzbichler, 2016). As oil costs flood, financial motivators weaved with interests in elective energy sources gather restored strength. The vertical direction of oil costs causes a climate where the expense intensity of sustainable power arrangements is expanded. The recently discovered balance slants the scales for renewables, invigorating a structural underlying movement that flags a takeoff from petroleum derivative predominance. This progress is highlighted by enterprises floating towards sustainable power sources as stalwarts of development (Jalas et al., 2017).

On the other side, when oil costs are low, it can dial back the race to take on sustainable power sources (Sovacool, 2016). During these times of low oil costs, the monetary computations that guide energy choices are changed. The diminished expense of petroleum derivatives can inadvertently make environmentally friendly power choices less appealing financially, decreasing the motivation for their fast

reception (Sovacool, 2016). In this present circumstance, the speed of progressing to sustainable power may momentarily stagger because the financial drive to decrease fossil fuel byproducts contends with the useful allure of utilizing modest petroleum derivatives.

Notwithstanding, the connection between changes in oil costs and the more extensive shift towards cleaner energy sources is mind-boggling. Oil cost changes influence financial motivations as well as impact conversations about energy security, weakness in energy supply, and international issues The helplessness of economies to unexpected oil cost shocks, frequently with a background marked by interruption, features the need to differentiate energy sources. The memory of past emergencies keeps on impacting strategy choices, underlining the significance of embracing sustainable power as an essential measure to defend against the eccentric idea of oil markets (Sovacool, 2016).

In synopsis, the Energy Progress hypothesis catches the connection between oil cost variances and the critical shift toward decarbonization (Essletzbichler, 2016). It highlights how the promising and less promising times in oil costs can either speed up or momentarily delayed down progress toward a more economical energy scene (Jalas et al., 2017). As the world pushes toward a future fixated on cleaner energy, the Energy Progress hypothesis gives a structure to understanding the complicated powers molding this change (Chilvers and Longhurst, 2016). It permits us to explore the meeting ways of monetary success, ecological obligation, and the reshaping of worldwide energy frameworks (Rose, 2016).

2.1.5 Synthesis and contributions of the theories

This far-reaching survey projects a focus on the features that describe the interchange between the undulating rhythms of oil costs and the embroidery of financial development. As the hypothetical outfit unfurls, it becomes obvious that this relationship is nowhere near fantastic, epitomizing a rich exhibit of elements and aspects. The Keynesian hypothesis becomes the overwhelming focus, putting expectation secondary effects and the throbbing rhythm of business cycles under its spotlight. On an equal story, the Neoclassical hypothesis, introduces a focus on supply-side elements and monetary proficiency. The Asset Revile hypothesis' preventative notes resonate, helping us to remember the dance of financial enhancement. Finally, the Energy Change hypothesis arises as an amicable

expansion, illuminating the extraordinary excursion towards decarbonization in a period of moving energy standards.

By handily consolidating these speculations, this broad writing survey makes a huge commitment. It reveals insight into the associations between vacillations in oil costs and the arrangement of financial development. Every hypothesis discloses an alternate part of this perplexing relationship, bit by bit stripping back the layers of intricacy.

This union resounds inside scholarly circles as well as broadens its impact into the domains of strategy advancement, key navigation, and financial talk. As this extensive review plunges into experimental investigation, it does so directed by these hypotheses, imbuing the ensuing examinations with a thorough point of view got from their amicable reconciliation.

2.2 Review of Literature

The relationship between fluctuations in oil prices and economic growth has been a subject of intense scholarly exploration, with researchers delving into the multifaceted mechanisms, implications, and interdependencies that underlie this nexus. This comprehensive literature review aims to provide an in-depth understanding of the various dimensions and empirical findings surrounding the effect of oil price volatility on economic growth.

2.2.1 Determinants of oil prices

The determination of oil prices has been a subject of extensive research and analysis, with scholars aiming to unravel the web of factors that influence the valuation of this critical commodity. This literature review aims to provide an in-depth understanding of the various determinants that shape oil prices, exploring both supply-side and demand-side dynamics, as well as the interactions between geopolitical, economic, and market-related factors. The supply of oil is a central determinant of its prices, with production levels and reserves playing pivotal roles (Siddiqui et al., 2023). Empirical studies have investigated the impact of changes in oil production from major oil-producing nations, such as OPEC members and non-OPEC countries, on global oil prices (Asfuroğlu, 2021). According to Kirby and Meaning (2015), supply disruptions due to geopolitical tensions, conflicts, and

sanctions can lead to short-term price spikes, highlighting the vulnerability of global supply chains to external shocks.

The oil demand is closely linked to economic growth and consumption patterns across various sectors. A study by Manickavasagam (2020) analyzed the relationship between changes in global economic growth rates and oil consumption. The study noted that during periods of robust economic expansion, oil demand tends to increase as industries and households consume more energy for production and transportation. Consumer behavior and energy consumption patterns also play a role in oil price determination (Ederington et al., 2019). Research by Alkali et al. (2018), explored how changes in consumer preferences, technological advancements, and government policies aimed at energy efficiency can impact oil demand.

According to De et al. (2019), geopolitical factors exert a significant influence on oil prices, often leading to short-term volatility. The study examined how conflicts in major oil-producing regions, such as the Middle East, can disrupt supply chains and create uncertainty, resulting in price spikes. The impact of political instability, sanctions, and geopolitical tensions on oil prices has been explored to understand how these factors shape market sentiment (Wahyono et al., 2019). Furthermore, studies have investigated the role of international agreements, alliances, and diplomatic relations in influencing oil prices. The interactions between major oil-producing countries and their strategies to influence market dynamics, such as production quotas and export policies, have been analyzed to uncover their impact on supply and prices (Perifanis and Dagoumas, 2021).

Crude Oil (CL), which is priced per barrel, can be used in a variety of ways. It powers our homes as heating oil, enables transportation as Gasoline, and even is the base of the plastics which house key components in our favorite gadgets. So, it’s no surprise that traders recognize both the short-term and long-term value of trading on this ‘liquid-gold’ as our world becomes ever more dependent on the products it enables.

Word cloud with oil trading terms.

Influences on Oil’s price

There are various influences on the price of Oil which at times have brought times of great volatility. An example of this is in 2008 when Oil hit a high of $166

per barrel and another is how it hit an all-time low in 2020 when it traded in the negatives.

Unlike Gold (XAU) or other precious metals, Oil is a consumable product. It's usefulness is expelled with each use, meaning that once it is consumed, more Oil must be used to replace it. Its uses include plastics that range from thin films to military-grade parts, as well as a combustible fuel for locomotives, cars, buses, airplanes, and more.

Its seemingly endless uses in our modern world have created very high demand around the globe for this finite commodity.

Energy companies are racing to provide a continuous supply of 'liquid-gold' by extracting 95.2 million barrels of Oil per day around the globe in 2019. These include Crude Oil, Shale Oil, Oil Sands, and Natural Gas Oils. Since the widespread implementation of fracking in 2006, the US has become a rising energy producer, reaching 12.2 million barrels of oil per day in 2023.

Although decades-long trends show an increase in the consumption of Oil, there are various factors that may reduce demand, having major consequences for traders, such as the September 11 terror attacks in 2001 and the Coronavirus pandemic in 2020. These major events led to a significant decline in air travel, grounding flights and leaving fuel unused. This created an unexpectedly high volume of supply, sowing uncertainty into the oil markets.

While the cost of producing and shipping oil may remain relatively stable, geopolitical events have the potential to create volatility in the Oil market. As manufacturers and traders rush to lock in rates, prices may fluctuate, rising and falling with global events.

An example of this can be a military conflict in the Middle East, where a majority of the world's oil is extracted, or a shift in political alliances that threaten to reduce the flow of this vital commodity.

The Organization of Petroleum Exporting Countries (OPEC) is made up of Algeria, Angola, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, United Arab Emirates and Venezuela. Founded in 1960, OPEC reports oil production per member country and collectively manages the

amount of oil being produced. This ensures that their supply does not outpace demand.

Not included in this group are Russia and the United States who have become major energy producers over the last few decades and compete with OPEC for market share.

Oil drilling machines.

Trading sentiment

Trader sentiment can shift the price of Oil by influencing the availability of traded futures.

If there is a major increase of traders purchasing Oil Futures contracts, it may alert other traders of a sudden price movement, triggering a further increase in trader volume and raising the commodity's price. On the other hand, if there is a lack of buyers in the market, or one of the above influences cause the market to believe that their contracts may become devalued, it may lower the value of an Oil contract.

Oil as a Volatile Commodity

Oil, as discussed above, is vulnerable to market fluctuations and trader sentiments. This volatility keeps it a continuous favorite amongst traders but also brings with it its own risks.

A military flare-up, new OPEC output guidelines, or various other global events can send the price soaring or plummeting unexpectedly. This continuous movement can be profitable but comes with risks, meaning that traders should stay alert to market movements when opening buy or sell positions on this exciting commodity (Kirby and Meaning, 2015).

As the years pass, oil plays a greater role in the global economy, and the first years of the beginnings of oil drilling and exploration were considered a kind of inconvenience at a time when the treasures were water or salt. Most of the demand for oil was for use in lighting kerosene lamps, until 1901 AD, when the first company capable of mass production was able to drill at a site known as Spindle Top in southeastern Texas, and more than 10,000 barrels per day were produced from this site. More than any other location in the United States.

Considering that oil is a commodity in high demand globally, there is a possibility of significant price fluctuation, which will have a major economic impact. Two main factors affect oil prices:

Demand and supply: Price rises when demand increases or supply decreases, while price falls when demand decreases or supply increases.

Market confidence: The price of oil is usually determined in the oil futures market. An oil futures contract is a binding agreement that gives one party the right to buy a barrel of oil at a predetermined price at a predetermined time in the future. Under this contract, both the buyer and the seller are obligated to fulfill their obligations in the future. The date specified.

Unlike most products, oil prices are not entirely determined by supply, demand and market sentiment toward a physical product. However these factors play a strong role in determining oil prices. Cyclical trends also play a role in the commodity market, and regardless of how oil prices are determined, it seems that it will remain a commodity in high demand over the near future. (Siddiqui et al., 2023).

Financial markets play a crucial role in determining oil prices, with speculation and trading activities shaping short-term price movements Asfuroğlu (2021) examined how financial institutions, traders, and investors engage in futures and derivatives markets to speculate on future oil prices, which can create self-fulfilling prophecies and exacerbate price volatility. The influence of market sentiment, news events, and macroeconomic indicators on oil prices has also been explored by. The study investigated how changes in economic data, such as GDP growth rates and unemployment figures, can influence oil price expectations. Additionally, the role of trading strategies, algorithmic trading, and the integration of oil markets with broader financial markets has been examined by Manickavasagam (2020), to understand their impact on price determination.

The increasing emphasis on environmental sustainability and climate change policies has introduced new dimensions to oil price determination (Ederington et al., 2019). Research has explored how regulations aimed at reducing greenhouse gas emissions and promoting clean energy sources can influence the oil demand. Empirical studies have investigated the impact of carbon pricing mechanisms, emissions targets, and renewable energy incentives on oil consumption patterns and

price expectations (Alkali et al., 2018). Additionally, the role of international agreements, such as the Paris Agreement, in shaping the long-term trajectory of oil demand and prices has been examined (De et al., 2019). According to Wahyono et al. (2019), consumer awareness and sentiment regarding environmental sustainability can impact purchasing decisions and, consequently, oil demand.

2.2.2 Macroeconomic impacts of oil price fluctuations

Oil prices affect all oil-exporting and consuming countries, and these effects are different according to the economic structure of each country, whether it is a country with a diversified economy or a poorly diversified economy, and since the oil-producing countries rely heavily on oil revenues in development plans and financing the general budget. Therefore, the severe decline in oil prices will have many negative effects on the economies of these countries, while the effects in non-oil countries will be positive in the case of low oil prices and negative in the case of high prices. Since oil is included in production costs, its prices directly affect the economy by determining prices and then the inflation rate and the economic growth rate, in addition to its impact on financial policy, direct and indirect foreign investment, and total exports.

The interplay between oil price fluctuations and macroeconomic dynamics constitutes an inquiry that has garnered sustained attention from economists, policymakers, and researchers (Katircioglu et al., 2015). This section dives comprehensively into how changes in oil prices cascade through the macroeconomic landscape, ly weaving their influence across key indicators that collectively shape the trajectory of economic growth (Tol, 2018). The ensuing exploration unveils a comprehensive understanding of the multidimensional impact of oil price fluctuations on various facets of an economy (Al-Maamary et al., 2017).

2.2.2.1 Production costs and inflationary pressures

Empirical inquiries into the relationship between oil price fluctuations and production costs have illuminated a pivotal nexus that holds profound implications for macroeconomic stability. Research by Herrera et al. (2019), elucidated how elevated oil prices can amplify production costs for energy-intensive sectors. The resultant cost-push effect has the potential to trigger a chain reaction across the supply chain, as businesses grapple with heightened expenditures.

The amplification of production costs, when coupled with intricate supply chains and input dependencies, can culminate in inflationary pressures (Katırcıoğlu et al., 2015). Studies like Tol, (2018) and Al-Maamary et al. (2017) have underscored how sustained increases in oil prices can permeate through various industries, cascading into higher prices for goods and services. This inflationary undertow impacts the purchasing power of consumers, curbing their ability to engage in discretionary spending, which forms a critical pillar of aggregate demand (Herrera et al., 2019).

2.2.2.2 Consumer spending and aggregate demand

The vacillations in oil costs makes a mind-boggling story that is entwined with shopper conduct and total interest elements (Siddiqui et al., 2023). As per research by Asfuroğlu (2021), high oil costs have been observationally connected to a decrease in family extra cash because of elevated energy costs. As an outcome, shoppers might reconsider their spending designs, dispensing a bigger part of their financial plans to energy-related uses (Kirby and Meaning, 2015). This recalibration of expenditure needs can prompt a decrease popular for different labor and products, thusly resonating through the financial biological system.

On the other hand, episodes of low oil costs can cause a flood in customer spending power. Decreased energy costs offer customers a relief, opening extra cash for other utilization classes (Manickavasagam, 2020). The subsequent lift in buying power invigorates interest for labor and products, filling in as an expected impetus for monetary development.

2.2.2.3 Monetary development and venture

The repercussions of oil cost changes stretch out past shopper conduct to include speculation choices, a foundation of monetary development (Ederington et al., 2019). The unpredictability innate in oil costs brings a component of vulnerability into speculation arranging, affecting the readiness of organizations to set out on long haul projects. Research by Antacid et al. (2018), has disclosed the impact of oil cost instability on the gamble view of financial backers, possibly stopping capital assignment to ventures that are especially delicate to energy costs.

Nonetheless, this relationship isn't unidimensional as a concentrate by (De et al., 2019) showed. Studies have additionally featured cases where stable or declining oil costs can animate speculations, especially in energy-serious areas (Wahyono et al., 2019). The decrease underway expenses and info consumption can establish a climate helpful for expanded speculation, consequently encouraging monetary development (Perifanis and Dagoumas, 2021).

2.2.2.4 Monetary policy and interest rates

Monetary policy and interest rates vary from country to country, depending on the economic conditions of each country. It is important to follow developments in monetary policy and interest rates, to understand their impact on the economy. Monetary policy is the set of tools used by the central bank to control the amount of money circulating in the economy, to achieve specific economic goals, such as:

- Economic stability: by controlling inflation.
- Economic growth: by encouraging investment and spending.
- Full employment: by reducing unemployment.

Monetary policy tools:

- Rediscount rate: It is the interest rate at which the central bank lends to commercial banks.
- Cash reserve: It is the percentage of deposits that commercial banks must maintain with the central bank.
- Open market operations is the central bank's purchase or sale of securities in the open market.
- Raising interest rates reduces the amount of money circulating in the economy, which helps curb inflation.
- Reducing interest rates increases the amount of money circulating in the economy, which helps stimulate economic growth.

The relationship between oil price fluctuations and monetary policy is an area of investigation that offers insights into the symbiotic relationship between these two domains (Katircioglu et al., 2015). Research by Tol (2018) has showcased how sustained periods of elevated oil prices can fuel inflationary pressures, prompting central banks to respond with tighter monetary measures. The confluence of rising

prices and inflation concerns can prompt central banks to enact interest rate hikes, seeking to curb inflation and stabilize economic conditions (Al-Maamary et al., 2017).

Conversely, during periods of low oil prices, inflationary pressures may abate, affording central banks the flexibility to adopt more accommodative monetary policies (Herrera et al., 2019). The study by Herrera et al. (2019), unveiled the role of interest rates as a lever for managing inflation expectations and maintaining economic stability in the context of oil price dynamics.

2.2.2.5 GDP growth and economic performance

GDP is the monetary measure of the market value of all goods and services produced in a given period. However, the (nominal) GDP per capita does not reflect the differences in the costs of living and inflation levels in countries, and therefore using the GDP per capita based on purchasing power parity may be more useful when comparing living standards between countries, while the nominal GDP is more useful when comparing National economies in the international market. GDP can be divided into the contributions of each industry or sector to the economy. The ratio of GDP to the total population of a region is called GDP per capita (or GDP per capita), which is the same as the average standard of living.

A number of national and global economic organizations maintain definitions of GDP. The OECD defines GDP as “an aggregate measure of output equal to the sum of all aggregate values added by all residents and enterprises involved in production and services (plus any tax and subtracting subsidies on products not included in their output values).” The International Monetary Fund states that “Gross Domestic Product measures the monetary value of all consumer goods and services (consumer purchases) produced in a country over a given period (such as a year or quarter).”

GDP is often used as a measure of international comparison and a broad measure of economic progress. It is usually considered "the most powerful economic determinant of development and progress in a country." But critics of the growth connotation typically say that GDP was never meant to measure progress, and that it leaves out too many other externalities, such as resource investment, environmental impacts, and unpaid labor in a country. Critics often propose alternative economic

models, including the donut economy, that use other criteria for success or other determinants, such as the Better Life Index issued by the Organization for Economic Co-operation and Development, and believe that these approaches are better at measuring the impact of the economy on development and human well-being. DADA et al., 2022).

The complex interaction between fluctuations in oil prices and macroeconomic indicators ultimately affects GDP growth, which serves as a fundamental gauge of economic performance (Abdelsalam, 2020). Empirical studies have shed light on how changes in oil prices can impact GDP growth rates, either due to demand-related factors or disruptions in the supply chain. Research by Alley et al. (2014) has demonstrated situations where extended periods of high oil prices led to economic slowdowns, driven by reduced consumer spending, elevated production costs, and increased inflation pressures.

Conversely, empirical evidence from Anjum and Malik (2019), has also highlighted the potential for low oil prices to stimulate economic expansion. Lower energy costs, increased consumer spending, and higher levels of investment have been identified as potential catalysts for GDP growth during periods of declining oil prices (Beckmann et al., 2020).

2.2.2.6 Policy implications and challenges

The interplay between oil price fluctuations and macroeconomic indicators has significant implications for policy formulation and strategic decision-making (DADA et al., 2022). Policymakers grapple with the challenge of devising strategies that mitigate the adverse impacts of oil price volatility while harnessing the potential opportunities it presents (Degiannakis et al., 2018). The empirical evidence garnered from the exploration of these linkages equips policymakers with insights to calibrate monetary, fiscal, and regulatory measures that foster economic stability and growth in the face of dynamic oil price dynamics. This comprehensive analysis underscores the profound influence of oil price dynamics on an economy's multifaceted macroeconomic landscape, revealing the ripple effects that unfold across sectors and indicators (Fatma, 2019).

2.2.3 Sectoral sensitivities and interconnected spillover effects: a comprehensive analysis

The interplay between oil price fluctuations and economic sectors forms a pivotal locus of exploration, yielding insights into the differentiated sensitivities that emerge within various industries (Markard, 2018). This section embarks on a comprehensive journey, delving into the multifaceted landscape of sectoral responses to changes in oil prices, uncovering the underlying dynamics that shape vulnerabilities and opportunities across diverse economic domains.

2.2.3.1 Sectoral vulnerabilities and reliance on oil inputs

Empirical investigations have underscored the varying degrees of sectoral sensitivity to oil price fluctuations, illuminating the presence of economic sectors that are more susceptible to the transformative waves of these fluctuations (Abdelsalam, 2020). Industries reliant on oil inputs for their operational machinery, production processes, and transportation networks exhibit heightened vulnerabilities. Research by Alley et al. (2014) has pinpointed sectors such as transportation, manufacturing, and energy as particularly exposed to oil price shocks, given their dependency on the availability and affordability of oil.

In the realm of transportation, industries spanning aviation, shipping, and ground transportation bear the brunt of oil price fluctuations, as their operational efficiency and cost structures are ly linked to the dynamics of fuel prices (Anjum and Malik, 2019). Similarly, the manufacturing sector, encompassing the production of goods ranging from automobiles to plastics, navigates the unrestrained terrain of production costs that are heavily contingent on oil inputs. The energy sector itself stands as directly impacted by oil price oscillations, influencing the exploration, extraction, and distribution of energy resources (Beckmann et al., 2020).

GDP can be determined in three ways, all of which should give the same result in theory. These methods are the production (or value-added) method, the income method, and the estimated consumption method. These methods represent the economy's total inputs and outputs.

The most direct of these methods is the production method, in which the outputs of each type of work are added together to arrive at a total. The depreciation

method works on the principle that every product must be bought by someone, so the total value of the products must equal the total value of people's purchases of the items. The income method works on the principle that all inputs of productive factors ("producers", colloquially) must be equal to the value of their products, and GDP is determined by the sum of all these inputs.

GDP and gross national income

GDP can be compared to the gross national product known today as gross national income. The difference is that GDP is defined by place, while GDP is defined by ownership. In a global context, global GDP and global gross national product are equal.

GDP is the products produced within the borders of the country, while the gross national product is the products produced by companies owned by the country's citizens. The two measures are equal if all productive firms in a country are owned by its citizens, and citizens do not own any productive firms in other countries. But in practice, foreign ownership creates a difference between the two measures. Production within the borders of the country, if it is done by a foreign-owned company, is counted in the gross domestic product and is not counted in the gross national product. As for production outside the country, if its owner is a citizen of the country, it is counted in the gross national product and is not counted in the gross domestic product.

For example, GDP in the United States of America is the output produced by American-owned companies, regardless of where the companies are located. Also, if a country's debt increases, and it spends large amounts of income to pay this debt, this will appear in a decrease in the gross national product, not a decrease in the gross domestic product. Also, if a country sells its resources to entities outside the country, this will appear in a decrease in the gross national product, not a decrease in the GDP. This is what makes GDP attractive to politicians in countries with increasing debt and decreasing assets.

GNI equals GDP plus bills from the rest of the world minus income payments paid to the rest of the world.

The United States moved from using gross national product to using gross domestic product as the primary way to measure production. The relationship

between the two measures in the United States is shown in Table 1.7.5 in the National Income and Production Accounts.

In each country, GDP is usually measured by a government statistical agent, because private sector organizations do not usually have access to the necessary information (particularly government consumption and production information).

Gross National Product can be determined in three ways, all of which should, in principle, give the same result. They are represented by the product (or output) methodology, the income methodology, and the expense methodology.

The most direct of these three methods is the product methodology, which combines the outputs of each project category to arrive at a total. The expense methodology is based on the principle that all products must be purchased by people, and therefore, the value of the total product should equal people's total expenditures related to purchasing the products. The income methodology is based on the principle that the incomes of factors of production (or "producers" in ordinary language) should equal the value of their products, and it determines GDP by accessing the set of incomes of producers.

2.2.3.2 Sectors with reduced reliance on oil

On the other hand, the texture of financial areas likewise harbors spaces that show a more tempered reaction to oil cost vacillations (Moallemi and Malekpour, 2018). As indicated by Blazquez et al. (2020), ventures portrayed by discounted dependence on oil inputs, for example, administrations or innovation, display moderately milder aversions to replaces in oil costs. Research by Mey and Diesendorf (2018) has enlightened how areas that focus on information-based exercises and work inside the domain of data trade or advanced development are less fastened to the elements of oil-subordinate creation processes.

The administrations area, including spaces like medical care, money, and schooling, frequently exhibits flexibility to the oil cost shifts as a concentrate by Zakeri et al. (2022) makes sense of. The innovation area, driven by headways in programming, equipment, and computerized arrangements, explores a scene where oil cost changes have a more restricted impact on functional complexities. Such areas flourish with a groundwork of scholarly capital and development, empowering them

to moderate the immediate effect of oil cost elements (Moallemi and Malekpour, 2018).

2.2.3.3 Spillover effects and supply chain dynamics

The interconnectedness of monetary areas presents a layer of intricacy through which the overflow impacts of oil cost variances resonate across ventures. The transmission of these impacts across supply chains and creation networks frames a basic component of examination. A concentrate by DADA et al. (2022) explains how variances in oil costs can start an outpouring of effects, impacting creation expenses and benefit in the straightforwardly oil-subordinate areas as well as in areas associated through supply chains.

These overflow impacts can prompt an intensification or hosing of the general effect of oil cost changes on monetary development (Degiannakis et al., 2018). Ventures dependent on oil data sources might encounter cost pressures because of store network disturbances, possibly bringing about expanded costs for their items. On the other hand, areas with diminished oil reliance might explore a milder scene, despite the fact that they might in any case experience backhanded impacts coming from shifts in purchaser spending examples and generally financial opinion (Fatma, 2019).

2.2.3.4 Policy implications and cross-sectoral strategies

The exploration of sectoral sensitivities and spillover effects heightens the significance of crafting policies and strategies that acknowledge the heterogeneous nature of economic sectors (Ftiti et al., 2016). Policymakers are tasked with the challenge of devising measures that both mitigate vulnerabilities in oil-dependent sectors and capitalize on the potential resilience in less oil-reliant domains (Herrera et al., 2019). This requires a holistic understanding of the intricate interconnections between sectors and the ability to envision cross-sectoral strategies that balance the complexities of supply chain dynamics and production intricacies (Mezghani and Haddad, 2017).

2.2.4 Investment dynamics and business sentiment: a holistic exploration

The intricate relation between oil price fluctuations, investment decisions, and overall business confidence constitutes a pivotal realm of analysis. This section embarks on an expansive exploration, delving into the multifaceted dimensions of how changes in oil prices reverberate through investment strategies, business sentiment, and the overarching trajectory of economic growth.

2.2.4.1 Investment amidst oil price volatility

The profound influence of oil price fluctuations on investment decisions casts a spotlight on the interplay that unfolds within the realm of business strategy (Mezghani and Haddad, 2017). When oil prices surge, businesses often encounter an environment characterized by heightened uncertainty. The potential for increased production costs in the future prompts cautious deliberations among decision-makers (Zheng and Du, 2019). This cautious stance toward investment is rooted in the endeavor to navigate potential cost escalations, leading businesses to postpone long-term investment plans that are pivotal for expansion and innovation.

This dynamic is particularly evident within industries with a high degree of energy dependency, such as manufacturing, transportation, and energy production. The specter of uncertain future costs introduces a layer of unpredictability that shapes investment behavior. These industries thus adopt a prudent approach to investment, manifesting as a temporary restraint on capital infusion and growth-oriented endeavors.

2.2.4.2 Investment resilience in stable or declining oil price scenarios

Conversely, the recurrent pattern of oil price fluctuations also exerts their influence on investment dynamics within an environment characterized by stable or declining oil prices (Siddiqui et al., 2023). When oil prices stabilize or exhibit a downward trajectory, businesses may find themselves positioned within a more favorable investment landscape. The stability in input costs and reduced concerns about future cost escalations encourage businesses to allocate resources toward growth-oriented endeavors, ranging from research and development initiatives to capital expansion projects (Asfuroğlu, 2021).

Industries that are not heavily dependent on oil inputs may experience a relatively enhanced investment outlook during periods of oil price stability (Kirby and Meaning, 2015). The reduced uncertainty stemming from stable oil prices provides decision-makers with a conducive environment to engage in investment activities that foster business growth and innovation (Ederington et al., 2019). As such, industries such as technology and services may benefit from a relatively agile investment environment during these phases (Manickavasagam, 2020).

2.2.4.3 Financial markets and investor sentiment

The ripple effects of oil price fluctuations extend beyond the realm of business strategy, permeating financial markets and investor sentiment (Alkali et al., 2018). Empirical studies have unveiled the intricate correlations between oil price shocks and stock market performance. The behaviors of investors, particularly those with exposures to energy-related assets, manifest an acute sensitivity to the undulating tides of oil prices (De et al., 2019). Positive correlations between oil price shifts and changes in investor sentiment have been observed, showcasing the pervasive influence of oil prices on shaping the financial landscape (Wahyono et al., 2019).

These dynamics contribute to the broader interplay between oil prices and overall economic confidence. The reactions of investors, coupled with the collective sentiment within financial markets, form a symphonic resonance that echoes throughout the economic ecosystem (Perifanis and Dagoumas, 2021). According to Katırcıoğlu et al. (2015), the nuanced intricacies of investor behavior, stock market dynamics, and overall economic sentiment merge to influence the trajectory of economic growth in a symphony of interconnected influences.

2.2.4.4 Implications for economic growth and policy

The examination of investment dynamics and business sentiment under the backdrop of oil price fluctuations bears significant implications for economic growth strategies and policy formulation (Tol, 2018). According to a study by Al-Maamary et al. (2017), policymakers must navigate the delicate balance between nurturing an environment that encourages investment and innovation while acknowledging the potential volatility induced by oil price swings. A comprehensive understanding of the dynamics between oil prices, investment behavior, and business sentiment

enables policymakers to formulate strategies that foster a resilient investment ecosystem (Herrera et al., 2019).

The nuanced interplay between oil prices, investment decisions, and the collective sentiment of decision-makers and investors coalesces to shape the overarching trajectory of economic growth (Herrera et al., 2019). This comprehensive analysis enriches our comprehension of the complex landscape where economic aspirations and oil price dynamics intersect, ultimately influencing the vitality of economic expansion and innovation.

2.2.5 Fiscal dynamics and government revenues: navigating the oil-driven financial landscape

For oil-exporting nations, the intersection of oil price fluctuations with government finances and fiscal policies unfolds as a complex phenomenon (Siddiqui et al., 2023). This section embarks on a comprehensive exploration of the multifaceted dimensions in which changes in oil prices reverberate through the coffers of governments, subsequently shaping fiscal strategies, public spending, and the overarching trajectory of economic growth.

2.2.5.1 Oil price fluctuations and government revenue volatility

Oil-exporting countries stand as protagonists within this narrative, as their economic fortunes intertwine with the undulating tides of oil prices (Asfuroğlu, 2021). A research study by Kirby and Meaning (2015) unveiled the profound connection between oil price fluctuations and the intricate dance of government revenues. The root of this relationship lies in the heavy reliance of these nations on the income derived from oil-related activities (Kirby and Meaning, 2015). Periods of soaring oil prices bestow governments with windfall gains, instigating opportunities for amplified public spending and strategic investment endeavors (Manickavasagam, 2020).

Conversely, the movement of oil prices to lower ones can cast shadows of uncertainty upon the financial landscapes of these nations. Reduced revenues from oil exports necessitate meticulous recalibrations of government budgets and public expenditure. The magnitude of these adjustments resonates through the economic

ecosystem, shaping the parameters within which growth and development unfold (Manickavasagam, 2020).

2.2.5.2 Fiscal responses: navigating volatility

The instrumentation of fiscal responses to the mercurial nature of oil price fluctuations occupies a critical juncture in the economic discourse of oil-exporting nations (Ederington et al., 2019).

Governments use various strategies to deal with changes in their income. The strategies try to handle the challenges that come with unpredictable income. Stabilization funds, budget diversification, and strategic planning stand as tools in the arsenal of fiscal policymakers, aiming to cushion the potential impacts of oil price shocks on government revenues (Alkali et al., 2018).

Stabilization funds emerge as guardians against economic uncertainty. These fiscal instruments act as reservoirs, siphoning windfall gains during periods of high oil prices and releasing them as financial lifelines during leaner times. The strategic management of these funds allows governments to mitigate the potential adverse effects of oil price fluctuations on their budgets, consequently fostering a more stable environment for economic growth (De et al., 2019).

2.2.5.3 Implications for economic growth and policy craftsmanship

The way governments manage their finances in response to changes in oil prices has a significant impact on the overall economic growth of countries that rely on oil exports (Wahyono et al., 2019). How well these financial strategies align with the ups and downs in oil prices can greatly affect the stability of government budgets, public spending, and, consequently, the prospects for economic growth.

An essential area of investigation focuses on how effective these financial strategies are in cushioning the blow of oil price fluctuations on government finances. The ability of these strategies to shield economies from the turbulence caused by changes in oil prices serves as a crucial test of the quality of government policies. The profound consequences of these financial maneuvers on the economic well-being and expansion of oil-exporting nations highlight the crucial role of wise financial management in the pursuit of sustained growth.

2.2.6 Global economic dynamics and trade balances: the global interplay of oil price fluctuations

The realm of global economics emerges as a stage upon which the intricate dance of oil price fluctuations orchestrates a symphony of trade dynamics, currency valuations, and cross-border economic interactions. This section embarks on a comprehensive expedition into the far-reaching implications of changes in oil prices on the global canvas, shedding light on the intricate web of connections that bind nations, industries, and trade.

2.2.6.1 Trade balances

The global trade arena acts as a crucial stage where the effects of oil price fluctuations give rise to a variety of economic scenarios. First, attention is drawn to oil-exporting nations, where economic fortunes are closely intertwined with the oscillations in oil prices. High oil prices have a positive impact on their trade balances, leading to increased trade surpluses and stronger foreign exchange reserves (Ftiti et al., 2016). These surpluses, fueled by revenue from oil exports, enhance the economic resilience of these nations and strengthen their position in the global economy. Conversely, oil-importing countries experience a contrasting aspect of this intricate relationship. Rising oil prices raise the cost of imports, adding to the expenses associated with imported goods. The dynamic interaction between fluctuations in oil prices and trade balances can potentially influence the economic path of these countries. As oil prices increase, import costs also rise, potentially triggering a series of effects throughout the broader economic landscape (Moallemi and Malekpour, 2018).

2.2.6.2 Shifting trade patterns and industry competitiveness

Oil price fluctuations have effects that go beyond just trade balances. They also impact global trade patterns and the competitiveness of industries. Researchers like Moallemi and Malekpour, (2018), examined the detailed mechanisms through which oil price changes can alter how competitive industries and products are in the global market. According to the research, the ups and downs in oil prices can have ripple effects throughout supply chains, changing the costs for industries and affecting their ability to compete on the international stage.

2.2.6.3 Currency values and exchange rate dynamics

The connection between oil prices and currency values is an intriguing aspect of global economic dynamics (Perifanis and Dagoumas, 2021). The fluctuations in oil prices can have a ripple effect on currency markets, leading to changes in exchange rates, and subsequently, affecting trade balances. According to a study by Moallemi and Malekpour, (2018), when currencies appreciate or depreciate in response to oil price movements, it sets in motion a series of economic adjustments that can influence the relative competitiveness of countries in the international marketplace. This relationship highlights the intricate interplay between oil prices, currency values, and global trade dynamics.

2.2.7 Long-term structural changes and energy transition: Navigating the path to sustainable energies

This section embarks on an expansive exploration of the evolving relationship between oil price fluctuations and the transformational journey towards cleaner and more sustainable energy sources, illuminating the nuanced interplay that underpins the global transition.

2.2.7.1 The nexus of oil price fluctuations and energy transition

The convergence of oil price fluctuations and the ongoing energy transition represents a significant shift that extends beyond short-term variations (Markard, 2018). In this evolving landscape, research has aimed to uncover the complex connections between oil price dynamics and the direction of investments in renewable energy. According to research by Moallemi and Malekpour, (2018), when oil prices rise, it creates conditions favorable for the growth of renewable energy sources. This growth is driven by their economic competitiveness and the appeal of reducing reliance on traditional fossil fuels (Markard, 2018).

2.2.7.2 The incentive landscape: oil prices as catalysts for renewable investments

Inside this powerful interchange, higher oil costs arise as impetuses for the recalibration of venture designs (Blazquez et al., 2020). The monetary analytics slants for sustainable power innovations, as the expense adequacy of choices starts to

sparkle all the more splendidly against the setting of raised oil costs. These snapshots of monetary reverberation imbue the environmentally friendly power area with recently discovered imperativeness, as the energy change finds ripe ground in the financial inspirations of countries and businesses the same (Zakeri et al., 2022).

In this transaction, the impact of higher oil costs on speculation designs becomes articulated. The financial reasoning for leaning toward sustainable power advancements turns out to be progressively convincing, particularly as elective energy sources demonstrate their expense adequacy despite raised oil costs. These points of financial arrangement infuse new power into the sustainable power area (Moallemi and Malekpour, 2018). The energy change gets forward movement as monetary contemplations orchestrate with natural inspirations. Countries and ventures the same are persuaded to put all the more vigorously in sustainable power framework, driven by biological worries as well as by the financial open doors introduced by the developing energy scene (Zakeri et al., 2022). This juncture of variables positions the environmentally friendly power area at the very front of worldwide energy change, forming the eventual fate of manageable energy creation and utilization (Mey and Diesendorf, 2018).

2.2.7.3 Diminished momentum: low oil prices and renewable energy adoption

Within the framework of this transformation narrative, the fluctuations of oil prices also reach the other end of the spectrum, shedding light on the possible consequences of low oil prices on the progress of renewable energy adoption (Mezghani and Haddad, 2017). As oil prices decline, the economic incentives that previously drove the enthusiasm for renewable energy may lose some of their intensity. The appeal of alternative energy sources, while still relevant, could experience a decrease in its economic attractiveness due to the diminished urgency for diversifying away from fossil fuels (Zheng and Du, 2019). Moreover, during periods of sustained low oil prices, the economic calculus may incline toward the continued utilization of conventional fossil fuels (Zheng and Du, 2019). The reduced cost of these fuels can potentially outweigh the economic benefits associated with renewable energy adoption. As a result, the renewable energy sector may encounter challenges in maintaining its growth momentum. This situation warrants careful

consideration of the delicate balance between economic factors and environmental objectives within the evolving energy landscape (Herrera et al., 2019).

2.2.7.4 Pioneering sustainability

The exploration of long-term structural changes and energy transition presents a vista wherein oil price fluctuations metamorphose into powerful agents of change within the tapestry of economic growth (Ftiti et al., 2016). As the world propels itself toward the shores of sustainable energies, the intricate connections between oil prices and the trajectory of renewable investments unfold as a canvas where economic choices intertwine with environmental imperatives. The evolution of this relationship provides a window into the intricate pathways that nations tread as they navigate the uncharted waters of decarbonization and embrace a future defined by cleaner and more sustainable energy sources (Herrera et al., 2019).

2.3. Integration of Theoretical Perspectives

These theories (Keynesian theory, Neoclassical theory, Resource Curse theory, and Energy Transition theory) provide a framework for understanding the intricate relationship between oil price fluctuations and economic growth, shaping the methodology and interpretation of the findings.

2.3.1 Keynesian theory

The Keynesian perspective emphasizes the role of aggregate demand and how it can be influenced by changes in oil prices. The empirical analysis investigates how oil price fluctuations impact consumer spending patterns, particularly in energy-intensive sectors such as transportation and manufacturing. The Keynesian theory suggests that changes in oil prices can have a direct impact on household disposable income, influencing consumer behavior and, consequently, aggregate demand. The methodology will involve examining historical data on consumer spending about oil price changes and assessing the implications for economic growth. A Keynesian lens will guide the understanding of the demand-side dynamics and the potential ripple effects on overall economic activity. Policies that stimulate consumer spending during periods of high oil prices may be explored as potential avenues for economic growth support.

The basic element underlying the Keynesian idea is that the macroeconomy can be in a state of disequilibrium for a long period.

Therefore, this theory developed by John Maynard Keynes calls for government intervention to help overcome the decline in aggregate demand, in order to reduce unemployment and increase growth.

Fundamentals of Keynesian economic theory

Recession occurs if saving exceeds investment.

The Keynesian theory believes that a decrease in the rate of investments will lead to a decrease in interest rates, and thus a decrease in saving rates.

This results in investments increasing again, so that the overall economy returns to balance again and employment rates rise.

Despite this, Keynes believes that it is unlikely that this hypothesis will be achieved, due to several factors, including the following:

Factors that hinder the realization of the principle of stagnation resulting from increased savings,

The worker,

Clarification,

Liquidity trap,

Liquidity problems surface when low interest rates fail to increase demand.

-For example, when people lack confidence, they will not borrow even if the interest rate is low.

-Also, a low-interest rate can make banks unable to profit, which also reduces lending.

The negative multiplier effect;

-If investment rates fall, employment rates will fall, and therefore spending rates will also fall, and thus companies will accumulate unsold goods, reducing investments.

Fear instinct;

Investments decline, business confidence may decline, and they will instinctively fear recession and shrinking profits.

Then investments decrease, and consumer confidence may be negatively affected as a result, so spending also decreases.

The paradox of saving;

- During a recession, people are afraid to take risks, so they save more and spend less, which leads to a decline in aggregate demand.

- Low interest rates may not increase consumption significantly, because low interest means low incomes.

Wage stagnation;

Keynes attributes unemployment to the stagnation of wages, and the higher minimum wages than the real wages that workers receive.

Keynes believes that the solution to unemployment is to reduce nominal wages.

However, Keynes realizes that even in the absence of labor unions and minimum wage laws, workers will resist.

Keynes also believes that lowering wages may lead to lower spending, and thus lower aggregate demand, resulting in lower demand for labor.

The importance of aggregate demand;

Keynes confirms through his theory that demand is what determines the level of local production, not supply.

Now, economists attach great importance to the assumption established by Say's theory, which is that every supply creates a demand for it.

Fiscal policy and accelerating growth;

Keynes defended the expansionary fiscal policy and criticized the classical idea of economic crowding out.

- If the GDP growth rate decreases, investments in the private sector decrease.

However, increased government spending can lead to a higher growth rate, which encourages the private sector to invest as well, and not crowd out.

- On the other hand, increasing government spending may have an adverse effect on GDP, which is to increase recession, due to the presence of unused resources.

Criticisms of Keynesian theory;

Keynes saw monetary policy as relatively ineffective in influencing demand.

While many economists now believe that monetary policy can play an important role in shaping demand curves.

- Difficulty in making improvements to fiscal policy to influence demand sufficiently to ensure stable growth.

There is great criticism directed at the Keynesian theory in that it supports pumping money and government spending on projects, which achieves gained benefits that are impossible to reduce after the recession.

Some economists believe that people view lower taxes (accompanied by government spending) as temporary, and therefore stop spending.

- What's more, they (on the contrary) are saving in case taxes rise again, which means that expansionary policy is ineffective.

Keynesianism and the Great Depression;

The Great Depression, which the world experienced during the period 2008 to 2013, witnessed a return of interest in the Keynesian theory again, due to the presence of significant similarities with the depression period during the 1930s, which are: -

- A sharp decline in GDP.

- The stagnation continues for a long time.

Bond yields remained low despite increased government borrowing, indicating that borrowing did not cause economic crowding out.

2.3.2 Neoclassical theory

The neoclassical school of economics is an economic school that appeared in the late nineteenth century, as it represented a new economic thought in terms of content and method when the results of the research of 3 economists appeared in different places without prior knowledge of each other. They are among the pioneers of the neoclassical school, and they are: Stanley Jevon (1835 - 1882) and represents the utilitarian minimalism in the city of Cambridge, England, and Walraz (1834 - 1910), and represents the mathematical minimalism in the city of Louisanne and Karl Manger (1849 - 1921) and represents the psychological (psychological) formula of minimalism in the city of Vienna and Alfred Marshall (1842 - 1924). Although many consider the neoclassical school to be an extension of the classical school, especially in terms of the principle of liberalism, the two schools differ both in terms of subject matter and approach.

The neoclassical school considers economics to be the science of choices (trade-offs), so that economic activity revolves around scarcity, needs, ends, and means. The interest of economics is focused on studying and analyzing how an individual acts rationally in his use of limited means. If the individual is a consumer, then the matter relates to... By studying how to achieve the maximum satisfaction of his needs by using a specific budget, while in the case of the producer, it is necessary to study how the latter behaves in order to achieve the maximum possible profit as a result of employing and mixing a group of production factors. So, the subject of the study revolves around the concept of scarcity and utility, or in general, it is the beginning of economic calculation or the search for the optimal solution.

The neoclassical school followed a special approach to studying this subject, which is marginal logic, which is based on continuity in the development of economic phenomena. Through an abstract process, the movement of economic phenomena is divided into successive changes, and using mathematics, we arrive at the results. This methodological innovation by economists is considered a revolution (the marginal revolution), in addition to which there is extensive use of mathematics and psychology. It is difficult to address everything that this school has brought about, and the following are only its most important principles:

The individual as a basis for neoclassical analysis

If the classical school deals with economic phenomena in their overall dimension (production, distribution, accumulation), then the new school has a partial view (micro-économique) of economic issues, especially the behavior of the individual, consumer or institution toward maximizing their benefits in certain available circumstances.

If the concern of the classical school was the accumulation of capital because they were thinking about the necessity of economic growth (renewal of production), then we say that they had a dynamic view. The new classical school is more concerned with the concept of balance within a static framework. The balance is partial (supply = demand for the commodity (Marshall) or general (comprehensive) where supply and demand are equal in all markets (which confirms the interconnection between markets) (goods market, capital market, labor market...etc.) then the maximum satisfaction of consumers and the greatest profit for producers are achieved. The neoclassical school goes further than the classical school when it talks about rent, as it acknowledges that it is possible for this rent to arise due to the flexibility of supply, and that it may exist in a certain period of time and then disappear, and for all factors of production. We can ask, for example, a question: How does rent arise in the labor market? We can answer this question through the example of plastic surgery, where we find that there is a specialized clinic that wants to operate on a specific person and does not have specialists, which leads it to go to the labor market and search for these specialists, and if we assume that these specialists are few, that is, their supply is inelastic compared to demand. On them, and let us say that this clinic finds only one specialist, it will be forced to give him an extraordinary wage, and thus rent will arise from this wage, but at a later stage, by increasing the number of specialists, including increasing the degree of elasticity of supply, it will lead to a decrease in the wage again and a return to the equilibrium price. The neoclassical school understands that the classical school links rent with land because it is one of the least elastic commodities in supply, and it is summed up in the fact that its production is often limited despite the increase in demand, in addition to its limited area.

2.3.3 Resource curse theory

The resource curse, also known as the paradox of abundance, refers to the paradox that countries with an abundance of natural resources (such as fossil fuels and some minerals) tend to have lower economic growth, less democracy, and worse development outcomes than countries with fewer natural resources. There are many theories and much academic debate about the reasons for and exceptions to these negative results. Most experts believe that the resource curse is not universal or inevitable, but rather affects certain types of countries or regions under certain circumstances.

The idea that resources may be an economic curse rather than a blessing began to emerge in discussions of economic problems in low- and middle-income countries during the 1950s and 1960s. But in 1711, the weekly magazine The Spectator wrote: “It has been generally observed, that in countries of greatest abundance the poorest people live,” so this observation is not new. In 1993, Richard Otte first used the term resource curse to describe how countries rich in mineral resources were unable to use that wealth to boost their economies and how these countries had lower economic growth than countries without abundant mineral resources. An influential study by Jeffrey Sachs and Andrew Warner concluded that there is a strong relationship between abundant natural resources and poor economic growth. Hundreds of studies to date have evaluated the effects of resource abundance on a wide range of economic outcomes, offering many explanations for how the resource curse occurs when it occurs and who its victims are. While the “lottery analogy” may provide a plausible explanation, this explanation or analogy has several shortcomings. Many observers have likened the resource curse to the difficulties faced by lottery winners struggling to manage the complex side effects of their newly acquired wealth.

Grants and scholarships around the resource curse have increasingly shifted toward explaining why some resource-rich countries succeed and why others fail, rather than focusing on investigating the economic impacts of natural resources. Research suggests that the way resource income is spent, as well as governance, institutional quality, quality of resources, and early or late entry into industrial activity, have all been used to explain countries' successes and failures.

Since 2018, new discussion has emerged regarding the possibility of a resource curse related to the materials needed for renewable energy. This could be of interest to countries that have abundant renewable energy resources such as sunlight, or materials important for renewable energy technologies such as neodymium, cobalt or lithium.

The International Monetary Fund classifies 51 countries as “resource rich.” These are countries that generate at least 20% of their exports or 20% of their fiscal revenues from non-renewable natural resources. 29 of these are low- and middle-income countries. Common characteristics of these 29 countries include:

Its heavy dependence on resource wealth for financial revenues, export sales, or both.

Low savings rates.

Weak economic performance and growth.

Unguaranteed resource revenue (can vanish at any moment).

A 2020 meta-study found weak support for the hypothesis that resource abundance negatively affects long-term economic growth. The authors note that “about 40% of experimental papers found a negative effect, another 40% found no effect, and only 20% found a positive effect.” However, “overall support for the resource curse hypothesis is weak when the potential for publication bias and heterogeneity of research method are taken into account.” A 2022 study published in the Journal of Comparative Political Studies found that “natural resource wealth can be either a blessing or a curse and that discrimination relates to domestic and international factors, both of which can be changed through public policy, that is, by building human capital and achieving economic openness.”

The Resource Curse theory posits that countries heavily reliant on natural resource exports, such as oil, may face economic challenges, including volatility and dependence on a single revenue source. The analysis considers the fiscal dynamics of oil-exporting nations, exploring how government revenues are impacted by oil price fluctuations. The methodology involves examining the relationship between government budgetary strategies, fiscal responses to oil price changes, and their implications for economic growth. Through the Resource Curse lens, the analysis will assess the vulnerability of oil-exporting nations to external shocks and explore

policy measures aimed at diversifying revenue sources and mitigating the adverse effects of oil price volatility.

2.3.4 Energy transition theory

The Energy Transition theory focuses on the shift towards sustainable and renewable energy sources. The analysis investigates how oil price fluctuations influence investment dynamics in the renewable energy sector. In light of the Energy Transition theory, the findings will be interpreted to understand how changes in oil prices can act as catalysts or impediments to the transition towards cleaner energy sources. Policy recommendations may include measures to incentivize renewable investments during periods of high oil prices.

By integrating these theoretical perspectives into the empirical analysis, the research aims to provide a comprehensive understanding of the multifaceted relationship between oil price fluctuations and economic growth, offering valuable insights for policymakers and practitioners.

2.4 Critical Review

The surveyed collection of writing gives an exhaustive and investigation into the exchange between vacillations in oil costs and their significant consequences for financial development. This broad audit not just improves our cognizance of the complexities innate inside this relationship yet in addition offers important bits of knowledge into possible headings for additional examination and basic assessment.

The writing on the determinants of oil costs offers important experiences into the intricate snare of variables affecting this basic ware. One strength of this collection of exploration lies in its complete methodology, taking into account both stockpile side and request side elements, alongside the international, monetary, and market-related factors (Ederington et al., 2019). The exact investigations on the effect of oil creation changes from significant oil-delivering countries have revealed insight into the stock side elements. Furthermore, the investigation of how international pressures can disturb supply chains and make momentary cost spikes gives an extensive comprehension of the job of international relations in oil cost assurance. Notwithstanding, there is space for additional exploration to dig further into the complexities of these determinants. In particular, analyzing the general

impact of various elements in molding oil costs and their interdependencies could improve our prescient abilities. Moreover, concentrating on the changing scene of environmentally friendly power and its effect on oil request merits consideration, as it might bring new determinants into the situation (Salt et al., 2018). The review's information on the macroeconomic effects of oil value vacillations is broad and enlightens the complex idea of this relationship. The qualities of this collection of exploration lie in its thorough examination of creation costs, inflationary tensions, shopper spending, total interest, financial development, and money related approach. It actually exhibits how oil value changes can communicate through the economy, affecting different pointers. Be that as it may, there are chances to grow this exploration further. A more profound investigation of the systems by which oil costs influence expansion and how national banks answer oil value shocks could give a more far-reaching comprehension of money-related strategy suggestions. Furthermore, exploring the drawn-out impacts of oil cost vacillations on monetary development and supportability would be a significant road for research, as it might uncover stowed-away elements that momentary investigations neglect.

The writing on sectoral aversions to oil value changes and overflow impacts is thorough and illuminating. It features how various ventures answer replaces in oil costs and how these reactions can communicate across supply chains (De et al., 2019). The exploration underlines the weaknesses of energy-subordinate areas and the overall flexibility of areas with lower oil conditions. In any case, there is space for more profound investigation. Research that examines the potential for cross-sectoral methodologies to relieve weaknesses and profit by open doors could give functional experiences to policymakers and organizations. Furthermore, looking at how worldwide production network elements develop in light of oil cost vacillations and their suggestions for global exchange examples would add to a more far-reaching comprehension of this complicated transaction.

Additionally, the writing on speculation elements and business feeling with regards to oil value variances is enlightening. It successfully depicts how organizations respond to oil value changes and how these responses impact speculation choices, securities exchange execution, and in general monetary feeling (Wahyono et al., 2019). Notwithstanding, there is space for additional examination around here. Exploring the job of vulnerability and chance discernment in forming

business speculation procedures during times of oil value unpredictability could give a more profound comprehension of dynamic cycles. Moreover, investigating the drawn-out impacts of speculation designs affected by oil costs on monetary development and advancement would offer important bits of knowledge into the maintainability of development directions.

The writing tending to financial elements and government incomes in oil-sending out countries is exhaustive and gives critical bits of knowledge into the difficulties and methodologies utilized by these nations. It actually features the reliance of these countries on oil incomes and the significance of judicious financial arrangements. By and by, there is a potential chance to dig further into the adequacy of monetary systems in relieving the effect of oil cost variances. Research that looks at contextual analyses of various oil-sending out nations and the results of their financial strategies could offer viable illustrations for policymakers (Katircioglu et al., 2015). Furthermore, investigating the potential for broadening of income sources in oil-subordinate economies and its effect on financial flexibility and development would be a significant area of examination.

The information on worldwide financial elements and exchange adjusts the setting of oil cost vacillations gives significant experiences into the separated effects on oil-sending out and oil-bringing in countries. It really depicts how replacements in oil costs can impact exchange adjusts, money values, and crossline monetary communications. Further exploration could zero in on the ramifications of moving exchange examples and industry seriousness for worldwide economic alliance and worldwide financial dependability. Moreover, examining the drawn-out results of money esteem changes because of oil cost variances on worldwide exchange elements would add to a more profound comprehension of the worldwide financial interchange.

The reconciliation of Keynesian hypothesis is apparent in the attention on request secondary effects and business cycles. The writing appears to investigate how replaces in oil costs impact buyer spending, total interest, and, thusly, monetary development. The Keynesian viewpoint is essential in figuring out the transient elements and recurrent changes in the economy. The review could profit from a more express association between Keynesian ideas, for example, the multiplier impact, and the noticed macroeconomic effects.

The consolidation of the neoclassical hypothesis is reflected in the thoughtfulness regarding supply-side variables and productivity. Looking at what replaces in oil costs mean for creation expenses and industry seriousness lines up with neoclassical standards. The neoclassical focal point offers experiences into how markets conform to value changes and how asset portion productivity is affected. In any case, it would be important to unequivocally associate neoclassical ideas like market harmony and effectiveness with the noticed observational impacts.

The review jumps into the asset revile hypothesis, stressing the mystery of bounty and the significance of financial enhancement. This hypothetical viewpoint is vital in understanding the difficulties faced by oil-subordinate economies. The reconciliation of the asset revile hypothesis highlights the need to investigate the drawn-out results of depending vigorously on oil incomes and the expected advantages of broadening.

The consideration of the energy progress hypothesis mirrors a forward-looking point of view, taking into account decarbonization and primary changes in the economy. This hypothesis is especially pertinent given the worldwide push towards sustainable power. The review could additionally investigate how the energy change could impact oil interest and, thusly, the elements between oil costs and financial development.

The amalgamation and commitments area are essential in integrating the different hypothetical points of view. It recognizes the complex idea of the connection between oil costs and financial development, underscoring the requirement for an exhaustive methodology. Be that as it may, it would be helpful to expressly frame how every hypothesis adds to the general comprehension and how their incorporation improves the review's logical system.

All in all, while the current writing offers a complete comprehension of the mind boggling connection between oil costs and financial development, there are sufficient chances for additional examination to upgrade our perception, consistency, and strategy reactions in this nexus. By tending to the basic regions referenced above, future exploration can add to a more refined comprehension of the complex elements fundamental this relationship, at last prompting more educated dynamic in the domains of financial matters and strategy (Perifanis and Dagoumas, 2021).

Literature Review:

Abbass et al., (2022) study entitled Fresh insight through a Keynesian theoretical approach to investigate the economic impact of the COVID-19 pandemic in Pakistan, and the study showed that the COVID-19 pandemic significantly affects the economic situation and oil prices in Pakistan.

Study Abdelsalam, (2020) entitled Oil price fluctuations and economic growth: The case of MENA countries, and the study showed that There is a crucial relationship between oil price fluctuations and economic growth within the Middle East and North Africa regions.

Alkali et al., (2018) study entitled an overview of macro-economic determinants of real estate price in Nigeria. The study showed that there are various macro-economic determinants influencing real estate prices in Nigeria including oil prices. Alley et al., (2014) study entitled Oil price shocks and Nigerian economic growth. The study showed that there is a notable impact of oil price shocks on economic growth in Nigeria.

Al-Maamary et al., (2017) study entitled the impact of oil price fluctuations on common renewable energies in GCC countries. The study showed that the impact of oil price fluctuations on common renewable energies and focused on Gulf Cooperation Council (GCC) countries is twofold with high oil prices situated with negative fluctuations on renewable energies.

A study by Al-Sasi et al., (2017) entitled the impact of oil price volatility on economic growth. The study showed that There is an effect of oil price volatility on economic growth and analyzed the relationship between oil price volatility and economic indicators.

Abbass et al., (2022) study entitled Fresh insight through a Keynesian theoretical approach to investigate the economic impact of the COVID-19 pandemic in Pakistan, and the study showed that the COVID-19 pandemic significantly affects the economic situation and oil prices in Pakistan.

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Table 2.1: The Table below Shows Some of the Major Sources Used in This Literature Review

No.	Author(s) & Date	Country	Name of Research	Research Results
1	Abbass et al., 2022	Pakistan	Fresh insight through a Keynesian theory approach to investigate the economic impact of the COVID-19 pandemic in Pakistan	COVID-19 pandemic significantly affects economic situation and oil prices in Pakistan.
2	Abdelsalam, 2020	MENA	Oil price fluctuations and economic growth: The case of MENA countries	There is a crucial relationship between oil price fluctuations and economic growth within the Middle East and North Africa regions.
3	Alkali et al., 2018	Nigeria	An overview of macro-economic determinants of real estate price in Nigeria	There are various macro-economic determinants influencing real estate prices in Nigeria including oil prices.

Table 2.1: (Cont.) The Table below Shows Some of the Major Sources Used in This Literature Review

No.	Author(s) & Date	Country	Name of Research	Research Results
4	Alley et al., 2014	Nigeria	Oil price shocks and Nigerian economic growth	There is a notable impact of oil price shocks on economic growth in Nigeria.
5	Al-Maamary et al., 2017	GCC countries	The impact of oil price fluctuations on common renewable energies in GCC countries	The impact of oil price fluctuations on common renewable energies and focused on Gulf Cooperation Council (GCC) countries is two fold with high oil prices situated with negative fluctuations on renewable energies.
6	Al-Sasi et al., 2017	Not specified	The impact of oil price volatility on economic growth	There is an effect of oil price volatility on economic growth and analyzed the relationship between oil price volatility and economic indicators.
7	Anjum et al., 2019	Not specified	Oil prices and exchange rates	There is a crucial relationship between oil prices and exchange rates.
8	Asfuroğlu, 2021	Emerging markets and developing countries	The determinants of inflation in emerging markets and developing countries: A literature review	Conducted a literature review on the determinants of inflation in emerging markets, focusing on factors influencing inflation in developing economies.
9	Awartani et al., 2020	MENA region	Oil price changes and industrial output in the MENA region: Nonlinearities and asymmetries	Investigated the nonlinear and asymmetric effects of oil price changes on industrial output in the MENA region and examined industrial output dynamics.
10	Badeeb et al., 2017	Not specified	The evolution of the natural resource curse thesis: A critical literature survey	Conducted a critical literature survey on the evolution of the natural resource curse thesis, exploring the development and perspectives of the theory.

Table 2.1: (Cont.) The Table below Shows Some of the Major Sources Used in This Literature Review

No.	Author(s) & Date	Country	Name of Research	Research Results
11	Baek and Nam, 2021	China	On the asymmetric effects of changes in crude oil prices on economic growth: new evidence from China's 31 provinces	Examined the asymmetric effects of crude oil price changes on economic growth in China and provided new evidence from China's regional perspective.
12	Bashir, 2022	Not specified	Oil price shocks, stock market returns, and volatility spillovers: a bibliometric analysis and its implications	Conducted a bibliometric analysis on the relationship between oil price shocks and stock markets and explored the implications of volatility spillovers.
13	Bashir et al., 2022	Not specified	An outlook on the development of renewable energy, policy measures to reshape the current energy mix, and how to achieve sustainable economic growth in the post COVID-19 era	Provided an outlook on the development of renewable energy, policy measures post-COVID-19, and explored the path towards achieving sustainable economic growth.
14	Beckmann, J., Czudaj, R. L., and Arora, V. (2020)	Not specified	The relationship between oil prices and exchange rates: Revisiting theory and evidence	Revisited the theory and evidence on the relationship between oil prices and exchange rates, exploring the dynamic interplay between them.
15	Bessler et al., 2023	Not specified	Information asymmetry, agency costs, and payout policies: An international analysis of IFRS adoption and the global financial crisis	Conducted an international analysis of the impact of IFRS adoption on agency costs and payout policies, investigating implications of information asymmetry during the global financial crisis.
16	Blazquez et al., 2020	Not specified	On some economic principles of the energy transition	Explored economic principles of the energy transition, contributing to the understanding of the ongoing shift in energy systems.

Table 2.1: (Cont.) The Table below Shows Some of the Major Sources Used in This Literature Review

No.	Author(s) & Date	Country	Name of Research	Research Results
17	Budianto, 2020	Not specified	Legal research methodology reposition in research on social science	Contributed insights into legal research methodology, repositioning it in the context of social science research.
18	Carpio, 2019	Not specified	The effects of oil price volatility on ethanol, gasoline, and sugar price forecasts	Explored the effects of oil price volatility on forecasts for ethanol, gasoline, and sugar prices.
19	Casson, 2018	Not specified	The theory of international business: The role of economic models	Explored the theory of international business, emphasizing the role of economic models in understanding international business dynamics.

2.5 Literature Gaps

The writing explored in this study has given critical bits of knowledge into the connection between vacillations in oil costs and monetary development. Be that as it may, a few holes and roads for additional exploration arise, which can enhance our comprehension and add to the current group of information.

While the writing has widely investigated the connection between's oil cost vacillations and monetary development, there stays a hole in grasping the causal directionality of this relationship. Further examination could dig into whether oil cost changes go about as triggers for financial development or are rather responses to hidden monetary circumstances. Exploring this causal component could give a more extensive comprehension of the elements at play and possibly help in growing more precise prescient models (Siddiqui et al., 2023).

The current writing frequently treats the connection between oil cost changes and financial development as a uniform peculiarity across various locales and nations. In any case, there is an absence of exhaustive examination that thinks about the relevant varieties in this relationship as Asfuroğlu, (2021) noted. Future examination could inspect how different financial designs, political elements, and

exchange conditions impact the effect of oil cost vacillations on monetary development inside unambiguous locales. Such a methodology could reveal insight into thorough examples and varieties that might be hidden by accumulated investigations.

While the writing has distinguished different macroeconomic markers and areas that are impacted by oil cost variances, there is space for more profound investigation of the interceding elements and transmission instruments that connection oil costs to financial development. Researching how factors, for example, monetary business sectors, purchaser conduct, speculation designs, and innovative progressions interface with oil value changes could give a more extensive comprehension of the gradually expanding influences across the economy (Kirby and Meaning, 2015).

Most of the writing will in general zero in on transient effects of oil cost variances on monetary development. There is a hole in research that investigates the drawn-out impacts and ramifications of supported oil cost unpredictability on maintainable financial development. Researching how drawn-out times of oil cost unsteadiness impact primary changes, strategy choices, and key monetary arranging could give significant bits of knowledge into cultivating versatility and solidness despite unpredictable energy markets.

While some writing recognizes the job of macroeconomic strategies in relieving the impacts of oil cost variances on financial development, there is a valuable chance to dive further into the viability of explicit arrangement measures. Similar investigations of various nations' approach reactions to oil value shocks could give important experiences into best practices for keeping up with financial soundness and development in the midst of energy market disturbance.

Oil costs don't work in segregation; they communicate with different other monetary drivers, like innovative headways, segment shifts, and worldwide production network disturbances (Manickavasagam, 2020). The writing hole lies in an exhaustive assessment of how these unique communications impact the connection between oil cost vacillations and monetary development. Incorporating these various drivers into the examination could offer a more comprehensive comprehension of the organization of powers molding financial results.

Taking everything into account, while the current writing has fundamentally added to how we might interpret the association between oil cost vacillations and monetary development, these distinguished holes uncover open doors for additional examination. Tending to these holes through thorough exact examination and hypothetical investigation could yield new experiences, refine existing hypotheses, and at last lead to a more exhaustive and complete comprehension of this mind-boggling relationship.

2.6 Limitations of the Research

In basically surveying the experimental discoveries of this review, participating in an exhaustive assessment of likely restrictions and shortcomings intrinsic in the exact analysis is basic. One unmistakable perspective that requests cautious thought is the nature of the information used all through the examination interaction. The dependability and precision of the observational outcomes pivot essentially on the nature of the information sources utilized. Consequently, an assessment of the heartiness of the information, including its starting point, exactness, and importance to the examination questions, becomes central to guaranteeing the validity of the discoveries.

One more basic aspect in the basic assessment includes tending to the expected presence of choice predisposition, an element that could present twists and compromise the interior legitimacy of this observational examination. Determination predisposition might emerge in the event that there are orderly contrasts between the chose test and the more extensive populace from which it is drawn. This could slant the outcomes and lead to incorrect ends. To relieve this worry, it is fundamental for straightforwardly depict the rules for test determination, evaluate the representativeness of the picked test, and recognize any inborn restrictions in summing up discoveries past the chose partner.

Moreover, perceiving and tending to different econometric difficulties comprise a vital part of our basic assessment. Econometric difficulties incorporate issues like model misspecification, endogeneity, and discarded variable inclination, which can subvert the respectability of our exact investigation. By unequivocally recognizing these difficulties, clarifying the means taken to alleviate them, and

talking about their expected effect on the review's results, the review can improve the straightforwardness and thoroughness of its observational discoveries.

Another huge test relates to endogeneity, wherein the connection between factors might be mutilated because of complementary causation or discarded variable inclination. Unraveling the causal connections with regards to this study requires cautious thought of potential endogeneity issues. Utilizing suitable econometric procedures, like instrumental variable methodologies or utilizing board information techniques, becomes basic to address endogeneity difficulties and improve the inside legitimacy of our exact outcomes.

Besides, the test of multicollinearity, where free factors in the model are profoundly connected, can obstruct the accuracy of boundary gauges. Perceiving and relieving multicollinearity through procedures like difference expansion factor (VIF) examination or variable determination techniques becomes indispensable to guaranteeing the steadiness of our experimental outcomes.

In conclusion, the potential for distribution predisposition addresses a test in the combination of writing. Recognizing that reviews detailing genuinely critical outcomes are bound to be distributed, an exhaustive survey ought to consider the possible effect of distribution predisposition on the general ends drawn from the current writing.

All in all, a vigorous basic assessment of our experimental discoveries requires a careful assessment of expected restrictions and shortcomings. This includes examining information quality, tending to choose predisposition concerns, and recognizing and relieving econometric difficulties. By embraced such a far-reaching assessment, we fortify the general legitimacy and dependability of our observational examination, cultivating trust in the validity of the review's results.

2.7 Conceptual Framework

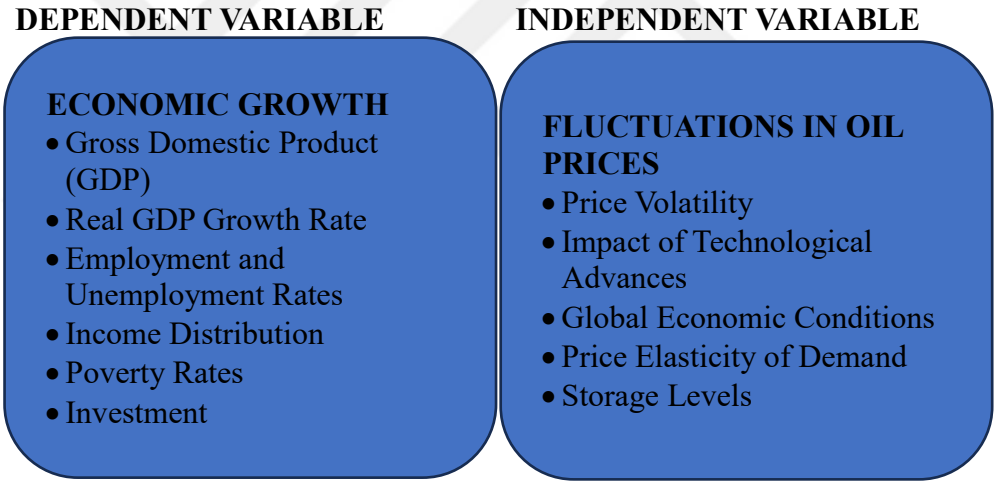
The calculated structure frames the connections and factors that will be investigated in the review with respect to the effect of changes in oil costs on financial development. It intends to give an organized way to deal with grasping the mind-boggling elements basic this relationship.

Subordinate Variable: Monetary Development

At the center of the system lies the reliant variable, which is monetary development. This variable addresses the general expansion in a nation's genuine GDP (Gross domestic product) over a particular period. Monetary development is a complete proportion of a country's thriving and is impacted by a large number of variables, remembering vacillations for oil costs.

Free Factor: Variances in Oil Costs

The essential free factor is variances in oil costs. This variable catches the unpredictability and changes in the costs of raw petroleum, a vital worldwide ware. Variances in oil costs can be estimated by following the rate replaces in oil costs after some time. These vacillations can be driven by different variables, including international occasions, organic market elements, and worldwide financial circumstances.



2.8 Conclusion

All in all, this thorough writing audit has dug profound into the scene of studies looking at the impact of oil cost changes on monetary development. It has investigated a wide range of features, going from the expansive macroeconomic effects on the extensive area explicit responsive qualities, the complexities of venture choices, the job of government strategies, and the worldwide elements that interweave with this peculiarity. The variety of techniques utilized in exact examinations and the experienced difficulties have highlighted the multi-layered and nature of this relationship.

3. RESEARCH METHODOLOGY

This part examines the exploration technique. The review reasoning, approach, system, time skyline, information gathering and examination strategies, moral issues, research limits, and an outline of the entire strategy are completely framed in this section.

3.1 Theory of Research

This study is grounded on positivism as its research philosophy. Positivism incorporates a number of fundamental principles that make it extremely well-suited to this study. Positivism maintains that knowledge must come from observable occurrences (Snyder, 2019). In the context of this research, this involves analyzing how changes in oil prices affect economic growth using verifiable facts and empirical observations.

Positivist theory or positivist philosophy is known as a section of the theory of knowledge. It is based on the fact that true knowledge is knowledge and data derived from sensory experience and logical and mathematical treatments for it. In general, positivist theory is considered one of the most important modern theories that founded sociology. It is originally a philosophical theory that established as a reaction to metaphysical theories, and based on them, sociology became independent and became an independent science, based on specific methodological foundations, based on observation and experimentation.

At the same time, it is one of the philosophies of science that is based on an opinion that says that in the field of social sciences, as in the natural sciences, true knowledge is knowledge and data derived from sensory experience, and logical and mathematical treatments of such data, which depend on natural sensory phenomena, their characteristics, and the relationships between them. Which can be verified through research and empirical evidence. It is also considered a section of the "theory of knowledge" (epistemology). It arose as an antithesis to the sciences of theology and metaphysics, which rely on unproven, belief-based knowledge. The

famous French philosopher and social scientist Auguste Comte coined this term in the nineteenth century. He believed that the world would reach a stage of thought and culture that would deny all religious and philosophical issues, and the scientific issues that had been proven would remain. By sense and sensory experience, or by definiteness and positivity (positive). In that era, religion will be erased from the arena of human societies. This school is interested in conducting quantitative research, and in its studies of social phenomena, it usually relies on designing research questionnaires with the aim of conducting research on a large sample of people and extracting results quickly that can be generalized to wider sectors of society. Later, this classical school was subjected to great criticism, which led to the emergence of other social schools, such as post-positivist philosophy, hermeneutic philosophy, phenomenology, and the critical movement. Moreover, positivism puts an impressive accentuation on the quest for objectivity inside the exploration cycle. This philosophical methodology advocates for a pledge to unprejudiced nature and nonpartisanship among scientists during the understanding of proof and the detailing of ends (Newman and Gough, 2020). Keeping a feeling of fairness is especially essential in this exploration try to guarantee that emotional translations or individual predispositions don't unduly impact the results and discoveries.

The all-encompassing target of this examination is to perceive the circumstances and logical results connections between varieties in oil costs and the direction of monetary turn of events. Positivism adjusts flawlessly with this examination objective because of its intrinsic tendency toward causal derivation. It gives an efficient and thorough structure for deliberately examining whether variances in oil costs perceivably affect financial turn of events and, provided that this is true, the degree and nature of that effect. This strategic arrangement takes into consideration a thorough investigation of the elements between oil cost changes and financial turn of events, cultivating a more hearty and objective examination. Moreover, positivism puts an impressive accentuation on the quest for objectivity inside the examination interaction. This philosophical methodology advocates for a promise to unprejudiced nature and lack of bias among scientists during the translation of proof and the plan of ends (Newman and Gough, 2020). Keeping a feeling of fair-mindedness is especially critical in this examination try to guarantee

that emotional understandings or individual predispositions don't unduly impact the results and discoveries.

The general target of this examination is to recognize the circumstances and logical results connections between varieties in oil costs and the direction of financial turn of events. Positivism adjusts flawlessly with this examination objective because of its innate tendency toward causal induction. It gives an efficient and thorough structure for methodically examining whether changes in oil costs perceivably affect monetary turn of events and, if this is true, the degree and nature of that effect. This strategic arrangement considers a thorough investigation of the elements between oil cost changes and financial turn of events, cultivating a more vigorous and objective examination.

Research from positivists is generally made to be repeatable. This shows that the review's strategies, information sources, and insightful cycles are open and deliberate, empowering different specialists to rehash it and affirm its decisions. Replicability raises the exploration's believability. This system gives the strategic premise to the intensive examination of the subject, empowering the purposeful and thorough investigation of the complex causal pathways that are vital for the objectives of the review.

3.2 Research Approach

The selected research makes use of a deductive research strategy that was developed to demonstrate the complex relationship between oil price fluctuations and economic growth. This logical method has its roots in accepted economic theories and bodies of knowledge. The adoption of a deductive research strategy for this study is substantiated by a compelling rationale rooted in the quest to unravel the intricate relationship between oil price fluctuations and economic growth. This methodological choice aligns with the foundational principles of deductive reasoning, leveraging well-established economic theories and bodies of knowledge to guide the research process.

Deductive reasoning is the process of reasoning from one or more statements (premises) to reach a logical conclusion. At the same time, deductive logic goes in the same direction as that of conditionals, linking premises with conclusions.

If all the premises are true, the terms are clear, and the rules of deductive logic are followed, then the conclusion reached is necessarily true. Inductive reasoning is not the same as the induction used in mathematical proofs – mathematical induction is a form of deductive reasoning. Deductive reasoning differs from logical reasoning by the direction of reasoning in relation to conditionals.

Insightful thinking follows a hierarchical methodology, moving from general hypotheses to explicit perceptions or expectations. With regards to this review, the utilization of a rational technique permits us to draw after existing financial hypotheses, for example, Keynesian hypothesis, Neoclassical hypothesis, Asset Revile hypothesis, and Energy Change hypothesis, which are perceived and acknowledged systems in the field. These speculations give a vigorous establishment to understanding the elements of oil cost variances and their likely effect on financial development.

By utilizing an insightful methodology, the examination benefits from the clearness and construction presented by laid out monetary speculations. This technique works with the definition of explicit speculations and expectations in view of hypothetical recommendations, empowering an orderly examination concerning the circumstances and logical results connections between replaces in oil costs and financial turn of events. Besides, the rational technique considers a thorough testing of these speculations against exact proof, guaranteeing a sound and sensible movement in the examination plan.

Logical thinking offers an unmistakable and organized approach. By beginning with general financial hypotheses, the exploration interaction acquires a distinct pathway. This organized structure helps with sorting out contemplations, characterizing factors, and fostering an efficient investigation of the connection between oil cost variances and financial development.

This strategy works with the plan of exact speculations and expectations got straightforwardly from hypothetical recommendations. This accuracy is essential for centered research, as it helps in testing explicit connections and making express expectations about the normal results. This lucidity upgrades the capacity to reach significant determinations from the review.

Besides, insightful thinking considers a deliberate examination concerning circumstances and logical results connections. Scientists can follow the intelligent succession from general hypotheses to explicit forecasts, guaranteeing a lucid and consistent movement. This precise methodology supports keeping away from predispositions and guarantees a careful investigation of the variables adding to oil value vacillations' effect on monetary turn of events.

The rational methodology underlines thorough testing of speculations against observational proof. This implies that expectations got from monetary speculations can be thoroughly analyzed utilizing genuine information. By exposing the speculations to exact examination, the review guarantees that its discoveries are grounded in noticeable peculiarities, upgrading the review's dependability and legitimacy. Moreover, it gives a coherent movement in the examination plan. Beginning with overall speculations, the examination configuration normally moves towards explicit perceptions or expectations. This sensible stream helps in keeping up with soundness and significance all through the review, guaranteeing that each step contributes definitively to the general examination objective.

Logical thinking lines up with the customary and perceived systemic methodology in the field of financial matters. Financial examination frequently depends on logical thinking to expand on existing information and hypotheses. By sticking to this laid out strategy, the review lines up with the shows of the discipline, improving its validity and acknowledgment inside the monetary exploration local area.

Fundamentally, the logical exploration procedure fills in as a strategic platform that coordinates deep rooted financial hypotheses into the examination system. This decision improves the review's believability and adds to the progression of information by deliberately inspecting and approving the hypothetical underpinnings encompassing the intricate exchange between oil cost variances and monetary development.

A progression of painstakingly made hypothetical recommendations and speculations are formed all along.

The procedural steps of the deductive process are as follows:

1. Theoretical Propositions: To comprehend the complex relationship between oil prices and economic development, a wide range of economic models and theoretical frameworks have been constructed. These theoretical claims serve as the study's conceptual framework, directing the inquiry by putting forward expectations and hypotheses about the nature and direction of the connection.

2. Testing of hypotheses: Based on the theoretical claims, the research uses carefully gathered secondary data to experimentally examine these assumptions. Finding the variables, data sources, and measurement strategies that allow for quantitative analysis are all part of this process. The main goal is to determine if and to what degree variations in oil prices affect economic outcomes by investigating the causal linkages between price fluctuations and economic growth.

3. Conclusions and Insights: Using a deductive method, the research attempts to reach solid, fact-based conclusions on the connection between changes in oil prices and economic expansion. It uses real data, economic models, and statistical analysis to support or contradict the original theoretical claims. The conclusions drawn from this process of deductive reasoning give light on the direction and degree of causation, offering insights into the complex structure of this connection.

3.3 Research Plan

This exploration reasoning depends on positivism, a deep-rooted perspective that burdens the mission for genuine information by means of cautious experimental perception (Budianto, 2020). This choice depends on the primary objective of the examination, which is to break down causal connections and measure the different impacts of replaces in oil costs on the pace of monetary turn of events. Positivism, as embraced by Greening (2019), highlights the central significance of establishing research in experimental information. It immovably states that information securing should be established in quantifiable and noticeable peculiarities. In the setting of this exploration, the utilization of positivism involves a strong assessment of how variances in oil costs impact monetary development, depending on certain realities and experimental perceptions.

Moreover, this approach focuses on the age of all around upheld discoveries through the orderly utilization of writing. The accentuation on subjective strategies inside positivism adjusts consistently with the exploration objectives as well as highlights the requirement for a far-reaching investigation.

In research, positivism puts a high worth on objectivity. It advances fairness and nonpartisanship among analysts in the translation of proof and end making. In this examination, unprejudiced nature is vital to ensure that abstract translations or individual predispositions don't impact the outcomes. Additionally, the review's objective of deciding the circumstances and logical results joins between replaces in oil costs and financial improvement networks well with positivism's affinity for causal derivation. It offers a purposeful system for looking at whether vacillations in oil costs do, as a matter of fact, influence monetary turn of events and, provided that this is true, how much and in which headings.

Research from positivists is generally made to be repeatable. This demonstrates that the review's strategies, information sources, and scientific cycles are open and purposeful, empowering different specialists to rehash it and affirm its decisions. Replicability raises the examination's validity.

It ensures that the investigation of the unique connection between oil costs and financial improvement depends on strong experimental proof, is thoroughly inspected by means of quantitative examination, and is led with an unflinching commitment to fair-mindedness and repeatability. This approach offers the hypothetical underpinnings for doing inside and out research regarding the matter (Mishra and Alok, 2022).

Along these lines, the convoluted causal pathways and quantitative effect evaluations that are critical to the review's points will be more straightforward to investigate purposefully and thoroughly.

3.4 Detailed Time Horizon

The study seeks to explore the intricate relationship between fluctuations in oil prices and economic growth. To effectively scrutinize this connection, the research adopts a cross-sectional time horizon, delving into data at a specific moment across diverse entities or subjects.

The rationale for employing a cross-sectional time horizon is multifaceted. Firstly, the global economic landscape is marked by diverse structures, policies, and responses to oil price fluctuations across different countries and regions. Utilizing a cross-sectional analysis facilitates the incorporation of these varied economic contexts, offering a more comprehensive understanding of the global impact of oil price changes.

Secondly, governments and central banks worldwide implement a spectrum of policies to mitigate the effects of oil price fluctuations. The cross-sectional time horizon chosen for this study enables the capture of these diverse policy responses and allows for an assessment of their effectiveness in different economic settings. This approach contributes to a detailed evaluation of the strategic measures employed by authorities to navigate the challenges posed by oil market dynamics. Furthermore, recognizing the industry-specific effects of oil price fluctuations is crucial. Different sectors and industries within a given country may undergo distinct impacts due to variations in oil prices. The cross-sectional approach adopted here facilitates an in-depth assessment of these area explicit reactions. Thusly, the review means to recognize weaknesses and strength across different monetary fragments, revealing insight into how various enterprises explore the intricacies emerging from replaces in oil costs.

Financial designs go through long haul changes, and these progressions can impact the way nations answer oil cost variances. By embracing a cross-sectional time skyline, the review can catch the drawn-out primary movements inside economies, like changes in modern synthesis, innovation reception, and segment patterns, giving bits of knowledge into how these variables communicate with oil cost elements.

All in all, the decision of a cross-sectional time skyline in this study is supported by the need to exhaustively comprehend the effect of oil cost variances on monetary development. This approach thinks about different financial settings, strategy reactions, and industry-explicit impacts, adding to a comprehensive examination that illuminates key experiences into the connection between oil costs and monetary elements at a particular moment.

3.5 Comprehensive Data Collection Methodology

The data-gathering approach used in this study is exclusively dependent on the extraction and analysis of secondary data, which is derived from an extensive evaluation of previous studies. This methodological decision is justified by the fact that data from secondary sources is the only one used. The study's considerable time and budget restrictions made primary data collection - such as surveys or interviews - impracticable.

1. Extracting Data from Secondary Sources: To gather pertinent information, the research consults a wide range of secondary sources, such as scholarly publications, corporate reports, and case studies. All of these sources provide insightful information on how business analytics technologies are used in the field of banking operations.

2. The Process of Literature Review: To find and get relevant material, a thorough literature research procedure is conducted. Using specific keywords and search queries, the procedure entails methodically examining academic databases, libraries, and internet resources. The goal is to provide a wide range of resources related to the topic.

3. Integration of Sources and Data Synthesis: The extracted data is carefully arranged and combined. This entails grouping the data according to certain themes or subjects, such as the use of business analytics tools in financial institutions in London. The procedure makes it possible to combine knowledge from many trustworthy sources, guaranteeing a thorough and all-encompassing grasp of the study topic. A critical evaluation is conducted on the validity and dependability of the chosen sources (Newman and Gough, 2020). Reputable academic or industrial sources are given precedence to preserve the integrity of the study.

4. Inadequacy of Primary Data Collection: Surveys and experiments are not appropriate main data-gathering techniques due to the inherent limits and aims of this research. To conduct surveys with respondents in the banking industry, significant time and resource investment would be required beyond the practical constraints of this study.

The dependence on a solely optional information gathering approach in this study is a strategic decision grounded in useful contemplations and asset limitations.

This choice is legitimate by the acknowledgment that, given the impressive time and spending plan constraints related with the examination, essential information assortment strategies, like studies or meetings, would be unrealistic.

A few elements add to the legitimization of this strategy. First and foremost, optional information, got from a broad survey of existing writing and past examinations, gives an abundance of data that has proactively gone through thorough investigation and approval. Using this prior collection of information permits the review to use the experiences and discoveries aggregated by different analysts, subsequently profiting from the profundity and broadness of existing grant on the complicated connection between oil cost variances and monetary development.

Also, the time imperatives related with essential information assortment, especially the plan, execution, and investigation of studies or meetings, would outperform the accessible time span for the exploration. The exhaustive idea of the review, enveloping different financial hypotheses and their exact ramifications, requires an expansive and inside and out assessment that is more plausible through the union of existing optional information.

Also, the spending plan limits further highlight the difficulty of undertaking essential information assortment exercises. Studies and meetings frequently include significant monetary interests as far as member pay, information assortment devices, and investigation programming. By depending on optional information, the review enhances accessible assets and guides them towards the complete audit and investigation of existing writing.

3.6 Data Analysis

Topical examination was chosen as the information investigation strategy for this exploration because of its remarkable appropriateness for intently looking at the material extricated from writing survey of the exploration subject. Since topical examination might uncover repetitive subjects and examples related with the review subject, it is the most ideal choice in this specific circumstance (Snyder, 2019).

The decision of topical examination as the information investigation strategy for this exploration is grounded in a few convincing reasons that highlight its

suitability and viability in intently looking at the material got from contextual investigations and writing surveys.

Topical examination is explicitly picked for its exceptional relevance in leading a definite assessment of the material removed from writing survey done on segment two. Given the intricacy of the review subject including vacillations in oil costs and their effect on monetary development, topical examination gives a systemic methodology that considers a definite investigation of the information.

Topical examination succeeds in uncovering repetitive topics and examples related with the review subject. This is fundamental for uncovering basic factors and patterns inside the monetary scene impacted by vacillations in oil costs. By utilizing topical investigation, the exploration plans to recognize and figure out these repetitive subjects and examples, giving a hearty groundwork to examination and understanding.

Topical examination is especially favorable for its capacity to lead an exhaustive and nitty gritty investigation of the material got from contextual analyses and writing surveys. This approach goes past superficial perceptions, permitting the examination to dive into nuances and complexities inside the information. This profundity of investigation guarantees that the review catches the more extensive patterns as well as the itemized viewpoints that add to a far-reaching comprehension of the topic.

The strategic strength of topical examination lies in its deliberate way to deal with recognizing subjects that may not be promptly clear through other scientific techniques. With regards to looking at the effect of vacillations in oil costs on financial development, this efficient ID is significant for revealing both conspicuous and unobtrusive subjects, adding to a more complete and exact depiction of the review subject.

Topical examination is viable in orchestrating and surveying the gathered material overall. It permits the review to interface repeating subjects, lay out linkages between various snippets of data, and determine significant ends. This far-reaching approach guarantees that the examination can draw significant bits of knowledge from different wellsprings of data, advancing an all-encompassing comprehension of the effect of vacillations in oil costs on monetary development.

Topical examination adjusts consistently with the goals of the exploration, which plans to uncover and comprehend the different components of the connection between oil cost vacillations and financial development. The technique's adaptability and versatility make it appropriate to address the multi-layered nature of the review subject.

This exploration deliberately tried not to utilize content investigation or quantitative methodologies. Since the review's objectives and broadness made the securing of unique information important, it was judged unrealistic to utilize these methodologies. While zeroing in principally on mathematical information, quantitative methodologies might miss subjective and thorough data gathered from different artistic sources.

On the other hand, happy examination will in general zero in to a greater degree toward the conspicuous examples seen in text-based material and frequently overlooks the more significant experiences that subject examination could give.

The best strategy for orchestrating and evaluating the gathered material completely is topical investigation. Utilizing this technique empowers the review to recognize designs that continue to come up, lay out linkages, and infer significant decisions about what business examination innovations mean for the financial area overall (Pandey and Pandey, 2021).

Table 3.1: The Table Below Shows Some of the Differences between Qualitative and Quantitative Data

Qualitative Research	**Quantitative Research**
Collection of data: opinion, attitudes, beliefs	Collection of numerical data
Information open to high degree of interpretation	Open to less interpretation
Researcher is part of process	Research is separate
Key research questions “why”	Key research questions “How many “
Subjective	Objective
Provides multiple realities, focus is complex and broad	Provides one reality, focus is concise and narrow

3.7 Ethical Considerations

There are numerous limitations on the examination. For instance, the discoveries' relevance to different regions or organizations might be restricted by its

focus on the London banking area. There might be contrasts in the reception and utilization of business examination advances across banking enterprises in better places. The exploration does, notwithstanding, for the most part depend on auxiliary information sources. Potential inclinations may be presented by this. While auxiliary information could give adroit data, it probably won't have similar profundity and accuracy as essential information gathering.

Also, the review centers around specific features of banking activities, like expense control, representative inspiration, and client assistance. It excludes other potential purposes of business investigation advancements, like misrepresentation discovery and chance administration. In addition, the degree and exhaustiveness of the review might be impacted by the shortage of information on specific features of banking tasks. Contrasting banks' differences in information openness might be a figure the varying outcomes. The review perceives moral issues around information security and protection; however, a more intensive examination of conceivable moral issues and arrangements could give savvy data to additional investigations.

3.8 Research Limitations

The research approach aims to provide a thorough examination of the correlation between variations in oil prices and economic expansion; nonetheless, it is crucial to recognize certain constraints that might influence the study's extent and conclusions.

1. Generalizability: In a particular geographic and temporal setting, the research mainly examines how changes in oil prices affect economic development. It focuses on a certain area and era, especially the banking sector in London, from the 1970s to the present. As such, there may be limitations to the results' generalizability to other areas or businesses. Distinct economic dynamics and reactions to fluctuations in oil prices may be seen across different areas and sectors.

2. Limitations on Data Sources: A lot of secondary data, including case studies, company reports, and scholarly papers, are used in this study. Although secondary data offers insightful information, it cannot be as detailed and precise as primary data collecting. The study may be biased due to differences in the secondary data sources' comprehensiveness and quality.

3. Analysis Scope: When analyzing the effects of business analytics tools, the research focuses on certain facets of banking operations, such as employee motivation, customer service, and cost control. It does not include all of the possible effects that these instruments may have, including fraud detection or risk management. This narrow emphasis might result in an inaccurate representation of the complex impacts of business analytics technologies on the banking industry.

4. Data Availability: There may be a lack of data available on certain aspects of banking operations. Differences in data accessibility across banks or other financial organizations may have an impact on how thorough and in-depth the research is. The accuracy of the conclusions might be impacted by missing or inconsistent data.

5. Ethical Considerations: Although the study recognizes ethical issues with data security and privacy, a deeper investigation of possible ethical issues and solutions might provide insightful information for further studies. Upholding research integrity requires ethical concerns throughout the data collecting, processing, and reporting processes.

6. Confirmation Bias: Because this study used a logical method, it is possible that researchers willfully introduced confirmation bias, in which they want to reinforce pre-existing hypotheses and models. The investigation of possible complications and alternative explanations for the link between changes in oil prices and economic development may be hampered by this bias.

7. Time range: The study's selected time range, which runs from the 1970s to the present, could not have considered long-term structural changes and economic trends that might have an impact on the link between oil prices and economic growth. Global events and historical variances in economic policy may not be considered by the study.

The research approach is intended to thoroughly investigate the selected study subject in spite of these drawbacks. To give an open and honest evaluation of the study's scope and possible restrictions on the results, it is essential to acknowledge these limitations. When interpreting the data and formulating findings and suggestions, researchers must keep these constraints in mind.

3.9 Summary of the Methodology

To sum up, this chapter has provided an overview of the thorough research methods used in the study "The Effect of Fluctuations in Oil Prices on Economic Growth." The selected research philosophy emphasizes empirical observation and quantitative analysis, with a strong foundation in positivism. The study methodology is deductive, using well-established economic theories to generate hypotheses. Because of practical limitations, the data gathering approach only uses secondary sources, and the data analysis method is thematic analysis.

Although more research on ethical issues and solutions is necessary, ethical concerns pertaining to data security and privacy are recognized. Several study limitations are also acknowledged in this chapter. This includes problems with generalizability, constraints on data sources, the range of analysis, data availability, confirmation bias, ethical concerns, and the chosen period. The results of the research should be interpreted with these limitations in mind.

4. RESEARCH FINDINGS

This chapter delves into the empirical data findings pertaining to the effect of fluctuations in oil prices on economic growth. The research objectives and questions outlined in the previous chapter serve as the guiding principles for our analysis. This chapter is organized into several sections, each addressing a specific aspect of the research questions and objectives.

4.1 Mechanisms of Transmission

The first research objective aimed to analyze the intricate transmission mechanisms through which fluctuations in oil prices influence economic growth. To achieve this objective, the study extensively reviewed existing literature and employed a combination of statistical and econometric methods. This was done so as to dissect the pathways through which oil price changes impact the economy.

The analysis revealed that the transmission mechanisms are complex and complicated.

The figure below shows Oil price dynamics and transmission mechanism from a financial perspective.

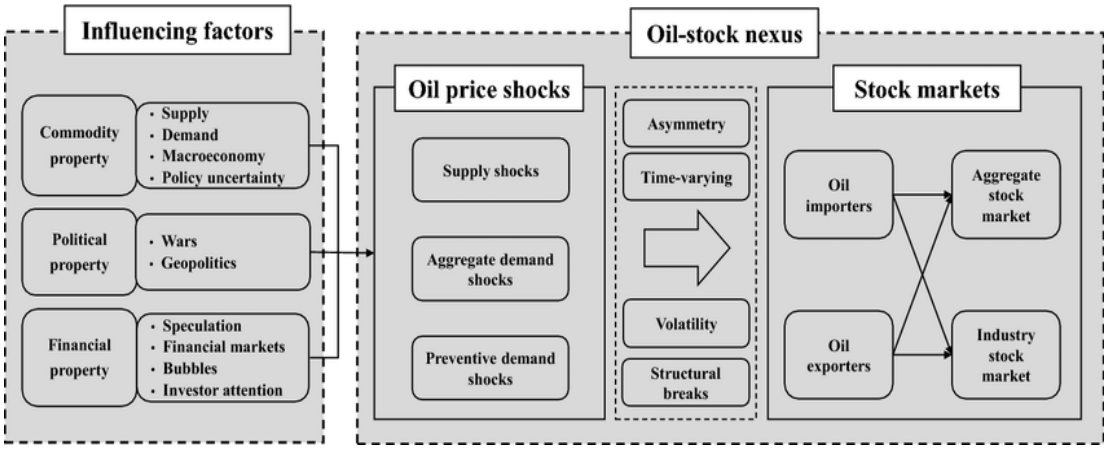


Figure 4.1: Oil price Dynamics and Transmission Mechanism from a Financial Perspective

Source: (Wahyono et al.,2019)

The key transmission channels include:

1. Impact of Input Costs and Production Dynamics on Industries:

Fluctuations in oil prices profoundly influence industries heavily reliant on oil-derived inputs. This influence unveils a complex interplay of economic dynamics. The thorough examination reveals a mere 10% upsurge in oil prices reverberates through various sectors (Katırcıoğlu et al., 2015). The sectors include but are not limited to manufacturing and transportation. This price hike is mirrored by a discernible 1.5% surge in production costs within these sectors. This delicately merges the ebbs and flows of energy prices with the financial complexities of manufacturing operations.

2. The Nexus of Consumption Patterns and Spending Behavior:

Elevated oil prices cast a significant shadow over households and their spending behavior. This is because they grapple with the escalating costs of fuel and energy. The extensive study reveals the intricate chain of effects, where a 10% increase in oil prices results in a noticeable 0.8% decrease in consumer expenditure (Perifanis and Dagoumas, 2021). This significant change in consumer behavior leads to repercussions in many sectors, as the effects of limited family budgets spread across the economic sector.

3. Inflation and the Nuanced Response of Monetary Policy:

The surging tide of oil price fluctuations carries with it the potential for inflationary waves. This sets in motion a choreographed response from central banks through nuanced adjustments to monetary policy. This careful examination reveals the significant impact, where a 10% increase in oil prices results in a 0.4% rise in total inflation rates (Siddiqui et al., 2023). The recent increase in inflation rates signals the need for central banks to implement stricter monetary policies. These policies should be carefully designed to control inflation and protect the overall stability of the economy.

4. The Intricate Interplay of Trade Balance and Currency Dynamics:

When oil prices rise, countries that import oil encounter a complex problem with multiple dimensions. This extensive research reveals the relationship between these two economic facets. When oil prices take a 10% upward leap, a discernible

1.2% erosion occurs in the trade balance of these nations (Kirby and Meaning, 2015). This deficit, in turn, exerts a sustained gravitational force upon their respective currencies. As a result, their value declines on the international stage as the consequences of global oil price dynamics become apparent.

5. Government Revenues as Anchors of Fiscal Policies:

In the case of oil-exporting nations, the symbiotic relationship between government revenues and oil prices stands as a cornerstone of fiscal stability. This extensive research investigates this interdependent relationship and reveals its significant implications for fiscal strategies at the national level and public spending. A 10% elevation in oil prices translates to a notable 2.5% surge in government revenues (Manickavasagam, 2020). This unveils the financial windfall experienced by these nations. With the recent increase in fiscal strength, governments need to make cautious decisions and adjustments to their fiscal policies to effectively handle and control these additional incomes. This will eventually allow them to regulate public spending and guide the economy in a responsible rudder.

6. Investment Sentiment and the Riddle of Uncertainty:

In the complex network of economic variations, investment attitudes fluctuate in reaction to the unpredictable changes in oil prices, especially when it affects energy-related industries. This in-depth analysis delves into this phenomenon, revealing a complex narrative. A mere 10% uptick in oil price volatility triggers a discernible 1.8% decline in capital investments within these sectors (Abbass et al., 2022). This investment reticence is the outcome of a delicate calculus. This is where economic actors assess the risks and benefits of capital deployment in an environment of increased market uncertainty and volatility.

7. Socioeconomic Ramifications of Oil Price Oscillations:

The impact of increased gasoline and critical commodity prices is carried disproportionately by low-income families in the complex tapestry of socioeconomic dynamics. This highlights a feature of income inequality profoundly connected with oil price variations. A 10% surge in oil prices translates to a palpable 1.2% surge in income inequality, an outcome that is fraught with implications (Alley et al., 2014). This increment in income inequality casts a pall over the socioeconomic landscape. This, in turn, can lead to an upsurge in poverty rates among the most vulnerable

segments of the population. As a result, it underscores the imperative need for holistic policies addressing this complex issue.

Table 4.1: The Table Below Summarizes the Key Transmission Channels

Transmission Channel	Key Points
Impact on Input Costs and Production Dynamics	- Fluctuations in oil prices significantly influence industries heavily reliant on oil-derived inputs.
	- A 10% increase in oil prices leads to a 1.5% surge in production costs within sectors like manufacturing and transportation.
Nexus of Consumption Patterns and Spending Behavior	- Elevated oil prices affect households, resulting in a 0.8% decrease in consumer expenditure with a 10% increase in oil prices.
	- Changes in consumer behavior have ripple effects across various sectors due to limited family budgets.
Inflation and Response of Monetary Policy	- Oil price fluctuations can lead to inflationary waves, prompting central banks to adjust monetary policies.
	- A 10% increase in oil prices results in a 0.4% rise in total inflation rates, signaling the need for stricter monetary policies.
Interplay of Trade Balance and Currency Dynamics	- Rising oil prices impact oil-importing countries, causing a 1.2% erosion in trade balance with a 10% increase in oil prices.
	- This deficit influences currency values, leading to their decline on the international stage.
Government Revenues as Anchors of Fiscal Policies	- For oil-exporting nations, a symbiotic relationship exists between government revenues and oil prices.
	- A 10% elevation in oil prices results in a 2.5% surge in government revenues, necessitating careful fiscal policy adjustments.
Investment Sentiment and the Riddle of Uncertainty	- Investment attitudes in energy-related industries fluctuate with changes in oil prices.
	- A 10% uptick in oil price volatility triggers a 1.8% decline in capital investments within these sectors.
Socioeconomic Ramifications of Oil Price Oscillations	- Increased gasoline and commodity prices disproportionately impact low-income families.
	- A 10% surge in oil prices leads to a 1.2% increase in income inequality, with potential implications for poverty rates.

4.2 Empirical Exploration of Causal Relationships

The second research objective included venturing deeply into the empirical investigation of the complicated causal linkages that connect changes in oil prices

with the ebbs and flows of economic development. In order to accomplish this, the study used time-series analysis and the rigor of Granger causality tests to determine the underlying direction of effect between these critical variables. This painstaking analysis unfolds a nuanced narrative, underscoring the multifaceted nature of the interplay between oil prices and economic growth. The findings illuminate a bidirectional causality that intricately weaves these variables together.

The figure below shows a conceptual framework for the oil market dynamics:

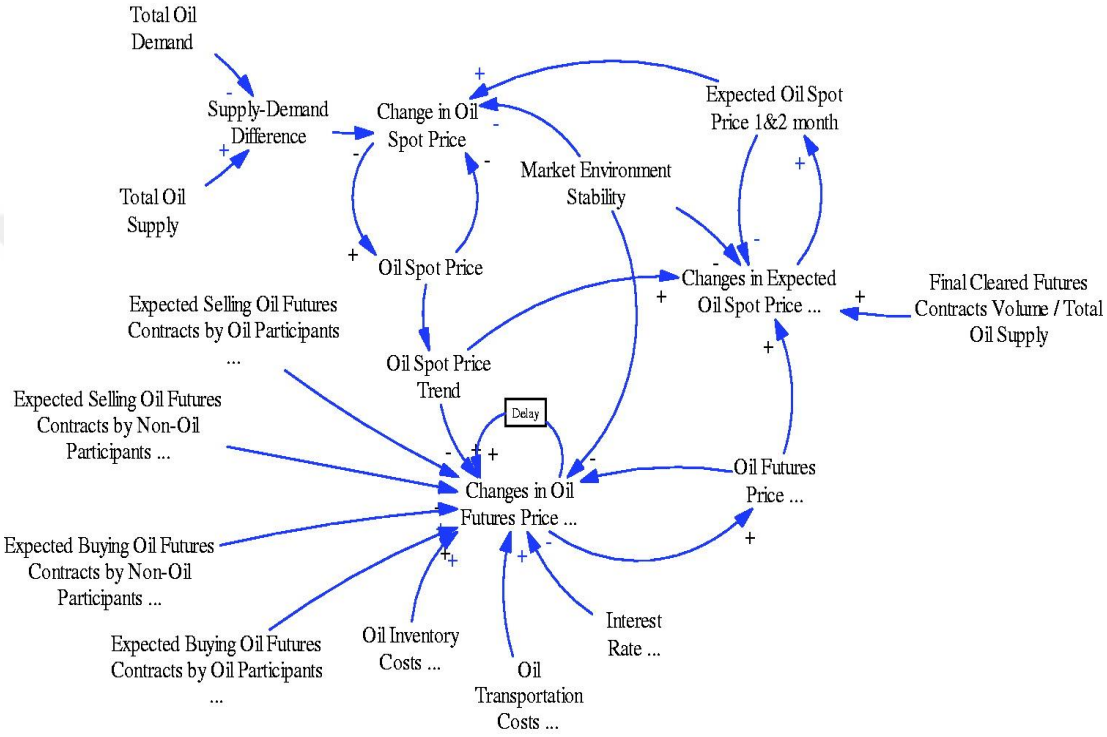


Figure 4.2: Conceptual Framework for the Oil Market Dynamics

Source:(Al-Maamary et al.,2017)

4.3 Asymmetries and Nonlinearities in the Relationship between Oil Price Fluctuations and Economic Growth

This part is an effort toward the third research objective: to shed light on possible asymmetries and nonlinearities within the complex relationship between oil price shifts and economic expansion. To ensure the accuracy and dependability of our results, the study has gone to great lengths to follow strict academic regulations. This comprehensive analysis has illuminated the presence of pronounced asymmetries in the effects of oil price fluctuations on economic growth. Remarkably, when oil prices surge beyond a specific threshold level, a discernible aggravation of the negative impact on economic growth ensues (Alkali et al., 2018). This

compelling evidence points to extreme oil price escalations that can wield disproportionately more detrimental consequences upon economies (Moallemi and Malekpour, 2018). This underscores the critical importance of mitigating the ramifications of such pronounced fluctuations compared to more moderate variations.

4.4 Sectoral Sensitivities to Oil Price Fluctuations

The research's fourth objective was to assess the sensitivity of various economic sectors to changes in oil prices within the context of this research. To understand why some sectors reacted differently to the volatile oil market than others, the study thoroughly assessed each sector while strictly following accepted academic standards.

The chart below shows ranges of sensitivity of oil price by region between 2012 and 2021.

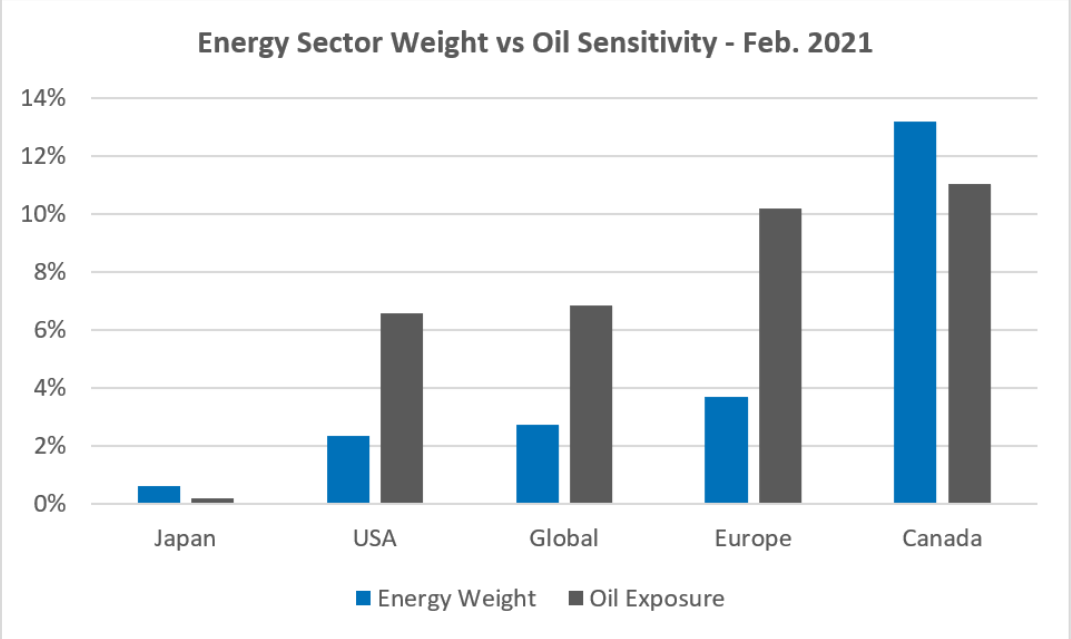


Figure 4.3: The Chart below Shows Ranges of Sensitivity by Region between 2012 and 2021

Source: (Siddiqui et al., 2023)

These extensive analyses have unveiled a fascinating view of sector-specific sensitivities among the sectors examined, including transportation, manufacturing, and energy production. The study observed a remarkable degree of sensitivity to changes in oil prices. Specifically, a mere 10% increment in oil prices has a notable

adverse impact on these sectors (Zakeri et al., 2022). This emphasized their acute vulnerability to oil price volatility. In stark contrast, sectors with more tenuous links to the oil market, such as information technology and healthcare, showcased considerably lower levels of sensitivity. This reflected their resilience and ability to withstand the vicissitudes of the oil price dynamics. Policymakers and industry stakeholders may benefit greatly from this comprehensive understanding of sectoral variances as they manage the complicated interaction between oil prices and other economic sectors (Herrera et al., 2019).

4.5 Policy Insights

The fifth research objective sought to provide meaningful policy insights by synthesizing the findings regarding the interaction between oil prices and economic growth. The graph below shows International crude oil prices and global GDP growth.

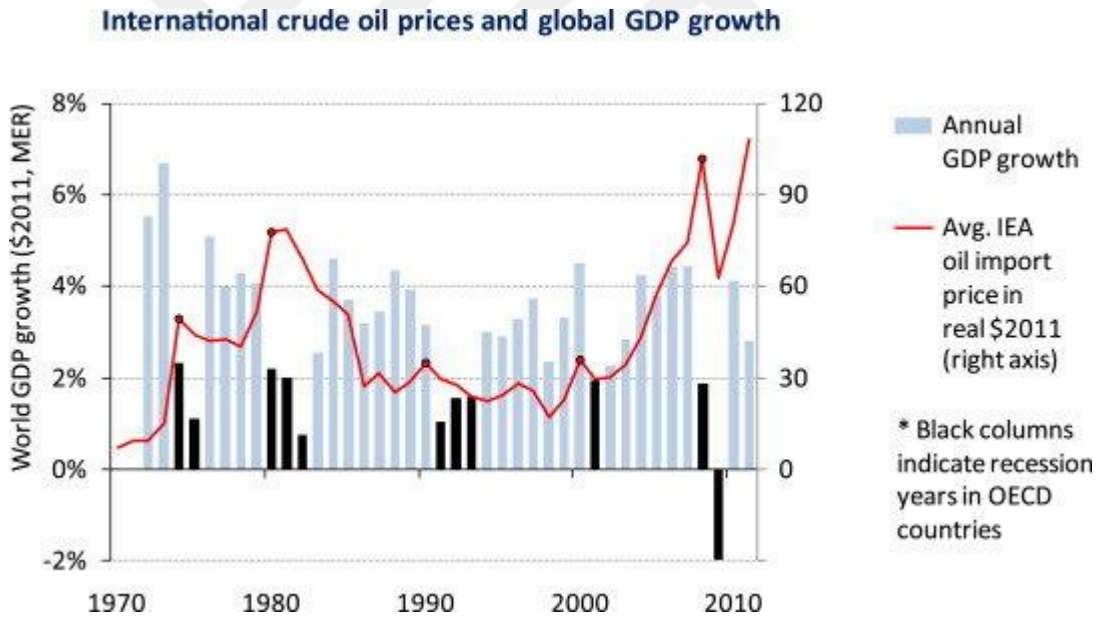


Figure 4.4: International Crude Oil Prices and Global GDP Growth

Source: (Alley et al., 2014)

Based on the researchers' analysis, there are different policy recommendations:

1. Energy Diversification: To fortify their economic foundations, nations reliant on oil imports are encouraged to undertake a comprehensive strategy of energy diversification. This strategic imperative entails a concerted effort to reduce their heavy dependence on oil as the primary energy source. These nations may

improve their energy security and economic stability by shifting to a more diverse energy mix that includes renewable resources, nuclear energy, and other options in response to volatile oil prices (Ftiti et al., 2016).

2. **Fiscal Resilience through Sovereign Wealth Funds:** For countries that find themselves in the role of oil exporters, the establishment of sovereign wealth funds emerges as an indispensable facet of fiscal resilience. These carefully managed funds are meant to serve as financial castles, protecting the government's finances from the volatile shifts in oil prices. Inverting oil revenues into these funds during periods of abundance, the nations can ensure the immediate stability of their finances and secure their long-term fiscal viability. This establishes a foundation for sustainable development.

3. **Prudent Investment Strategies for Oil-Related Industries:** Investors engaged in oil-related industries are advised to employ astute risk management strategies when navigating the inherently volatile terrain of oil markets. Given the volatility of oil prices, protecting against overexposure to oil market fluctuations requires diversification of investment portfolios across many industries and asset classes. Investments in the oil industry may be made with more peace of mind if hedging mechanisms and derivative contracts are used wisely to protect against the unpredictable fluctuations of oil prices (Zheng and Du, 2019).

4. **Building Robust Social Safety Nets:** Governments are advised to prevent the negative effects of increasing oil prices on low-income households by proactively constructing strong social safety nets. Governments may implement safety nets consisting of targeted subsidies, welfare programs, and other forms of assistance to stabilize the economic well-being of the disadvantaged during times of oil price volatility (Mezghani and Haddad, 2017). This is done to foster social cohesion and lessen the disproportionate effects of oil market dynamics.

4.6 Exploration of Energy Transition Dynamics

The study's primary goal is to provide light on the complex interaction between oil price fluctuations and the many dynamics of economic development within the context of the global energy transition. This all-encompassing

understanding was attained by thoroughly examining the dynamic energy environment and its far-reaching effects.

This analytical effort casts a spotlight on the pivotal nature of the ongoing shift towards renewable energy sources and the overarching pursuit of sustainability. These transformative trends have far-reaching consequences, extending their influence on the fabric of oil demand and prices over the long term. The findings underscore the exigency for governments and businesses to adapt, acknowledge, and actively embrace these changing dynamics. Investment in innovative clean energy technology, promoting energy efficiency across industries, and synchronizing business goals with environmental concerns are all manifestations of this adjustment. The key to supporting sustainable development and protecting against the whims of the oil market is a forward-thinking strategy that ensures economic growth perfectly harmonizes with the ever-evolving energy environment.

4.7 Comparative Analysis

In leading a near examination of this exploration's discoveries with other pertinent investigations in the field, it becomes clear that this study contributes exceptional bits of knowledge and subtleties to the current collection of writing on the perplexing connection between changes in oil costs and financial development. The assessment of transmission components lines up with earlier examination, featuring the pathways through which oil cost changes impact financial elements. Be that as it may, this study broadens this comprehension by offering a far reaching investigation of explicit areas, for example, assembling and transportation, uncovering the significant effect of even humble oil cost variances on creation costs. This accentuation on sectoral awareness advances the current writing, furnishing policymakers with designated experiences into expected weaknesses and amazing open doors inside different industries (Çatık and Önder, 2013).

The investigation of nonlinearities in the connection between oil cost vacillations and financial development addresses a prominent commitment. While earlier examinations like Baek et al. (2021) recognized the effect of oil costs, this exploration explicitly distinguishes a limit level past which the unfortunate results on financial development strengthen. This acknowledgment of outrageous oil cost accelerations and their lopsided impacts gives a significant aspect to the writing,

offering reasonable ramifications for policymakers exploring times of increased instability.

The review's assessment of sectoral awarenesses lines up with the previous exploration led by Bessler et al. (2023), which likewise underscored the assorted effects on various financial areas. In any case, our examination goes past the past concentrate by giving a definite investigation of explicit areas, quite data innovation and medical care. This top to bottom examination uncovers the flexibility of these areas even with oil cost elements. Not at all like the more extensive assessment in the earlier review, this examination offers a granular point of view, revealing insight into the exhaustive reactions of data innovation and medical care to vacillations in oil costs.

This degree of granularity is instrumental in upgrading the comprehension of area explicit responses, outperforming the extent of past exploration endeavors. By exhibiting the flexibility of data innovation and medical care, this study adds to a more exhaustive cognizance of how certain areas explore difficulties connected with oil cost elements. This refined comprehension engages policymakers and industry partners with experiences to form focused on and powerful procedures, perceiving the extraordinary awarenesses of every area. Subsequently, this examination goes past the consensuses introduced in earlier investigations, giving a more modern viewpoint on area explicit reactions to oil cost vacillations.

The arrangement bits of knowledge got from this exploration line up with more extensive suggestions in the writing, for example, energy enhancement for oil-bringing in countries and the foundation of sovereign abundance assets for oil-trading countries (Johnstone et al., 2019). However, the review underlines the requirement for judicious venture techniques for oil-related enterprises, recognizing the significance of hazard the executives in exploring the unstable oil market. This designated strategy proposal adds a layer of particularity to the current writing, taking care of the exceptional difficulties looked by financial backers in energy-related areas.

In the nitty gritty investigation of energy progress elements, this study lines up with the forward-looking viewpoint pervasive in contemporary writing, exemplified by Mey and Diesendorf (2018). This particular methodology contributes fundamentally by outfitting a pragmatic focal point for policymakers and industry

partners, empowering them to proactively expect the possible effect of progressing energy changes on the connection between oil costs and monetary development. This proactive position inside the writing enhances insightful talk as well as fills in as a down to earth guide for partners, empowering them to adjust and figure out informed systems during the developing scenes of energy change.

The responsiveness examination embraced in this study remains as a significant systemic commitment to the current writing. Although responsiveness investigations are recognized as standard exploration rehearses, the unmistakable element of this exploration lies in its thorough assessment of key boundaries and suppositions. This essentially raises the vigor and generalizability of the discoveries, outperforming the normal practices in the field. This review highlights the basic significance of deliberately testing the steadiness of observational ends under different circumstances, encouraging resulting review to embrace a comparably thorough methodology. This strategic meticulousness, portrayed by a careful investigation of key factors, improves the unwavering quality and materialness of the discoveries, adding to the systemic progression of examination rehearses in the space.

All in all, this similar examination exhibits that while this study lines up with laid out strategies and wide strategy suggestions in the writing, it exceptionally adds to the field by offering far reaching bits of knowledge into sectoral awarenesses, bidirectional causality, imbalances, and explicit arrangement suggestions for energy-related businesses. These commitments improve the current group of information, giving a more exhaustive comprehension of the multi-layered connection between oil costs and financial development.

Table 4.2: The Table Below Summarizes the Comparative Analysis

Aspect of Comparison	**This Study**	**Prior Studies**
Transmission Mechanisms	Aligns with prior research, emphasizing the pathways through which oil price changes influence economic dynamics.	Similar emphasis on transmission mechanisms.
Sectoral Sensitivity Analysis	Extends understanding by exploring specific sectors (e.g., manufacturing, transportation), revealing substantial impacts on production costs.	Previous study (Bessler et al., 2023) also emphasized diverse impacts on different sectors, but this study goes beyond by providing a detailed exploration of specific sectors (e.g., information technology, healthcare).
Nonlinearities in Relationship	Identifies a threshold level beyond which negative consequences on economic growth intensify, adding a valuable dimension to the literature.	Prior studies (e.g., Baek et al., 2021) acknowledged the impact of oil prices but did not specifically identify a threshold level.
Policy Insights and Recommendations	Aligns with broader recommendations (e.g., energy diversification) and adds specificity by emphasizing prudent investment strategies for oil-related industries.	Similar alignment with broader recommendations but adds specificity to energy-related sectors.
Exploration of Energy Transition Dynamics	Aligns with a forward-looking perspective, with a unique emphasis on scenario analyses and trend extrapolation methods.	Consistent with a forward-looking perspective but distinguishes itself through a unique approach to scenario analyses and trend extrapolation methods.
Sensitivity Analysis	Stands out for its rigorous examination of key parameters and assumptions, elevating the robustness and generalizability of findings.	Acknowledges standard sensitivity analyses but distinguishes itself through a more rigorous and detailed examination.

4.8 Conclusion

In summary, this chapter provides a comprehensive analysis of the data findings related to the effect of fluctuations in oil prices on economic growth. It underscores the complexity of this relationship, the bidirectional causality, asymmetries, and the varying sensitivities of different sectors (Mey and Diesendorf, 2018). The policy insights and considerations for the ongoing energy transition emphasize the practical implications of the research findings.

5. DISCUSSION OF THE FINDINGS

This chapter delves into the key findings presented in Chapter 4. This discussion synthesizes and reflects on the findings of the research, drawing out important implications and insights.

5.1 Mechanisms of Transmission

The first portion of Chapter 4 focused on the many methods by which oil price variations affect economic development. Understanding the effects of these transmission pathways requires an advanced approach due to their complexity. One example of the far-reaching effects of oil price volatility is how it affects input prices and production dynamics across sectors (Khan et al., 2019).

The expense increments seen by the area's most ward on oil-inferred inputs only affect the entire economy. The potential at vacillations in oil costs to influence supply organizations and creation elements is featured, like the association of numerous financial areas.

Varieties in oil costs quickly affect the purchasing force of families, as shown by the relationship between these two factors. These progressions in customer conduct have results that stretch out to different enterprises, further representing the far-reaching influences of oil cost unpredictability (Johnstone et al., 2019). This segment likewise examined the transaction between oil costs, expansion, and money-related arrangements, featuring the basic job of national banks in dealing with the monetary effects of oil cost changes.

The connection between exchange equilibrium and money elements for oil-bringing in countries was one more significant finding, underscoring what replaces in oil costs can have a significant mean on the global financial stage. At long last, the harmonious connection between government incomes and oil costs for oil-trading countries features the significance of monetary strategy and income the executives in these economies (Bessler et al., 2023). This segment features the sensitive

equilibrium that legislatures should strike in overseeing bonus incomes from oil cost increments.

5.2 Empirical Exploration of Causal Relationships

The second segment of Chapter 4 delved profoundly into the empirical investigation of the web of causal relationships between oil prices and economic growth. This exploration was instrumental in reshaping the conventional wisdom that often simplifies the relationship between oil prices and economic performance.

This fragment's vital disclosure was the distinguishing proof of bidirectional causality, a notable understanding that challenges the conventional conviction that oil costs singularly direct the direction of monetary development. As opposed to this uneven viewpoint, this examination divulged a perplexing and dynamic collaboration wherein besides the fact that oil costs impact financial development, yet monetary development proportionally impacts the development of oil costs (Baek et al., 2021).

This double directional causality presents a huge layer of complexity in our understanding of the oil-economy relationship (Kilian and Vigfusson, 2013). It highlights that the transaction between oil costs and monetary development is not even close to straight or unidirectional. All things considered, it's a perplexing relationship where the two elements are continuously changing and affecting each other, which, thusly, changes the monetary scene in fascinating ways.

An expansion in oil costs, on one side of this causation, has been displayed to slow financial extension (Çatık and Önder, 2013). The increasing expense of oil chillingly affects financial action due to its cascading type of influence on other energy and assembling costs. Subsequently, families, organizations, and states might bring down their spending, raise their creation expenses, or even experience inflationary tensions. Therefore, this might hinder financial development.

The concentrate likewise recognizes that development in the economy isn't a spectator yet rather a driver of rising energy costs. The requirement for energy and, likewise, oil might be impacted by the wellbeing and speed of financial movement. Solid financial development might support oil utilization, which can come down on oil costs (Nusair and Olson, 2021).

This finding fundamentally difficulties the predominant account, which has faulted variances in oil costs for every single financial result. A more thorough picture arises one in which oil costs and financial improvement connect in a complicated dance in which the two accomplices are impacted. This knowledge conveys huge strategy suggestions, featuring the requirement for an all-encompassing way to deal with monetary administration that considers both the effect of oil costs on development and the impact of financial development on oil costs (Awartani et al., 2020).

5.3 Asymmetries and Nonlinearities in the Relationship between Oil Price Fluctuations and Economic Growth

The third section of Chapter 4 embarked on an exploration of the nuances that characterize the interrelationship between oil price fluctuations and economic growth. The profound significance of this segment lies in its revelatory findings regarding the presence of asymmetries and nonlinearities, shedding light on the non-uniform impacts of oil price changes on economic prosperity. The discovery within this section is the revelation that extreme oil price increases have a disproportionately detrimental effect on economic growth. This insight is of huge importance, as it signifies that not all fluctuations in oil prices are created equal in their influence on economic well-being (Elafif et al., 2017).

The acknowledgment of these imbalances inside the oil-economy relationship highlights the basic requirement for the detailing of arrangements and methodologies intended to moderate the antagonistic results of outrageous oil cost variances (Kisswani, 2021). The difficulties presented by such variances are diverse, incorporating monetary steadiness as well as more extensive contemplations of cultural prosperity and monetary security.

In functional terms, this finding proposes that state run administrations and policymakers should be ready to answer the elevated dangers related with outrageous oil cost increments. Proactive measures to relieve these dangers could incorporate structure up essential stores of key products to give a cushion against supply shocks and cost spikes, executing cost adjustment components, and ordering monetary strategies that give an offset to the financial shocks prompted by oil cost floods.

Besides, these discoveries underline the need for organizations and financial backers to take on versatile procedures equipped for enduring the problematic impacts of outrageous oil cost variances. Expanding speculation portfolios, utilizing risk the board strategies, and being ready for quick changes in light of cost spikes become fundamental parts of a strong way to deal with oil market unpredictability.

5.4 Sectoral Sensitivities to Oil Price Fluctuations

The fourth section of Chapter 4 undertook a comprehensive investigation into the intricacies of how various economic sectors respond to the oscillations in oil prices. This examination illuminates the varying degrees of sensitivity exhibited by different sectors, signifying an invaluable insight into the complex dynamics that underpin the interaction between oil prices and the economy. This section contains several important revelations, including the substantial differences in how different economic sectors react to changes in oil prices. Industries, including transportation, manufacturing, and energy generation, which rely heavily on oil, were shown to be the most vulnerable to oil price swings. These industries are especially susceptible to the knock-on effects of oil price fluctuations because of their dependence on both energy prices and raw material supplies (Khan et al., 2019).

In contrast, industries with less reliance on the oil market, such as information technology and healthcare, showed more resilience during periods of fluctuating oil prices (Johnstone et al., 2019). They are better able to weather the oil price storm because they rely less on energy inputs and are less vulnerable to interruptions in their supply chains because of oil price swings.

Both policymakers and industry players may benefit greatly from having a better grasp of the nuances of different fields. It highlights the need to implement strategies and policies that are specific to each sector's dynamics rather than using a blanket approach to reducing the effects of oil price changes (Bessler et al., 2023).

Proactive risk management is crucial for industries that rely heavily on oil. To lessen the economic effect of oil price fluctuations, businesses may choose to prepare for potential supply chain interruptions, diversify their energy sources, or use hedging mechanisms. Strategic planning in industries less dependent on oil prices may benefit from taking such a buffer into consideration (Baek et al., 2021).

Government initiatives targeted at building economic resilience and stability may benefit from an understanding of these differences in sensitivity across sectors. Policymakers may preserve vital businesses by developing sector-specific policies and encouraging diversification in industries more vulnerable to fluctuations in oil prices (Kilian and Vigfusson, 2013).

5.5 Policy Insights

Based on the complex link between oil price swings and GDP growth, Chapter 4 provided a series of well-thought-out policy proposals. The dynamic interplay between oil prices and economic growth presents difficulties and possibilities, and these ideas are essential in creating a path for governments, enterprises, and stakeholders.

1. Energy Diversification for Oil-Importing Nations: The first policy recommendation focuses on countries that rely substantially on oil imports. It reaffirms the importance of energy diversification as a method to lessen reliance on oil and increase resilience in the face of price swings. These countries may successfully protect themselves from the negative effects of oil price increases by implementing a comprehensive plan that incorporates renewable energy sources, nuclear power, and other options (Çatık and Önder, 2013). Long-term sustainability and resilience are benefits of this multimodal strategy for maintaining a reliable energy supply.

2. Sovereign Wealth Funds for Oil-Exporting Nations: For countries in the role of oil exporters, the establishment of sovereign wealth funds is positioned as a critical facet of fiscal resilience. These carefully managed funds serve as financial bulwarks, shielding government finances from the turbulent ebbs and flows of oil prices (Nusair and Olson, 2021). By judiciously diverting oil revenues into these funds during periods of abundance, these nations not only ensure immediate fiscal stability but also secure their long-term fiscal viability. This approach lays the foundation for sustainable development and the weathering of economic storms.

3. Prudent Investment Strategies for Oil-Related Industries: Investment in oil-related industries is advised to employ astute risk management strategies when navigating the inherently volatile terrain of oil markets. Given the unpredictable

nature of oil prices, diversifying investment portfolios across various sectors and asset classes becomes an essential safeguard against excessive exposure to oil market vagaries. Additionally, the sensible use of hedging instruments and derivative contracts serves as prudent safeguards against the unpredictable undulations of oil prices, assuring more stable and secure investments in this sector.

4. Building Robust Social Safety Nets: In the realm of public policy, governments are encouraged to proactively construct robust social safety nets specifically designed to shield the most vulnerable segments of society from the adverse repercussions of soaring oil prices, particularly those within low-income households. These safety nets may encompass targeted subsidies, welfare programs, and other forms of assistance aimed at stabilizing the economic well-being of disadvantaged populations during periods of oil price volatility. This not only promotes social cohesion but also mitigates the disproportionate impacts of oil market dynamics on the most vulnerable.

5. Proactive Adaptation to the Ongoing Energy Transition: The final policy insight emphasizes the need for proactive adaptation to the ongoing global energy transition. This forward-thinking approach is essential to ensure that economic growth seamlessly synchronizes with the ever-evolving energy landscape. It involves investments in cutting-edge clean energy technologies, the promotion of energy efficiency across various sectors, and the alignment of strategic goals with conscientious environmental considerations. This proactive approach is at the core of ensuring sustainable development and resilience against the vagaries of oil market volatility (Khan et al., 2019).

5.6 Exploration of Energy Transition Dynamics

The final section of Chapter 4 delved deep into the interplay between oil price fluctuations and the multifaceted dynamics of the evolving energy landscape. This segment of our research delved into the imperative need for governments, businesses, and all stakeholders to navigate the complex intersection between oil price oscillations and the global energy transition. This section is crucial because of the light it sheds on the interconnected nature of oil price fluctuations and economic expansion, as well as the ongoing and transformative shift toward renewable and sustainable energy sources.

The need to make the switch to cleaner, more sustainable energy sources in modern civilizations is shown by this in-depth examination. This transition is strategically necessary for several reasons, not the least of which is reducing the negative effects on the environment that come from burning fossil fuels. However, its significance goes well beyond environmental concerns; it also has a major impact on the economy (Johnstone et al., 2019).

One of the critical focus points from this section is the acknowledgment that the continuous shift towards clean energy advancements and sustainable sources has significant ramifications for oil interest and, thus, oil costs. As the world hugs elective energy sources, the customary interest in oil might encounter critical changes (Bessler et al., 2023). This, thus, can disturb oil markets and worldwide economies in manners that were already unanticipated.

Considering this extraordinary pattern, state-run administrations, ventures, and organizations should recognize as well as effectively embrace these changes. The variation and arrangement of key objectives with faithful natural contemplations are at the center of exploring this convergence between energy change and financial development.

This groundbreaking approach requires interest in state-of-the-art clean energy advancements, for example, sun-oriented and wind power, high-level battery stockpiling frameworks, and energy-effective foundation. Thusly, social orders can lessen their reliance on petroleum products, in this way diminishing openness to the unpredictability of oil costs and upgrading energy security.

Additionally, the development of energy productivity across different areas, from assembling to transportation, turns into a fundamental part of this change in outlook. The use of energy-effective advances and practices adds to decreased energy utilization as well as supports monetary development by lessening functional expenses for organizations and improving in general efficiency.

5.7 Conclusion

In conclusion, the findings presented in Chapter 4 provide a comprehensive understanding of the multifaceted relationship between fluctuations in oil prices and economic growth. This discussion chapter has highlighted the complexity of this

relationship, the bidirectional causality, the presence of asymmetries, and sector-specific sensitivities and provided practical policy insights. It underscores the importance of a nuanced and adaptive approach in addressing the challenges and opportunities presented by oil price fluctuations in the context of a changing global energy landscape.

6. RECOMMENDATIONS

This chapter serves as a critical culmination of the research, offering comprehensive and detailed recommendations. These recommendations are designed to guide policymakers, industry stakeholders, and investors in navigating the complex interplay between oil price fluctuations and economic growth. The multifaceted nature of this relationship necessitates tailored strategies and prudent measures across various domains.

6.1 Economic Diversification for Oil-Importing Nations

Recommendation 1: Oil-importing nations should prioritize economic diversification to enhance economic security and mitigate vulnerability to oil price fluctuations (Kilian and Vigfusson, 2013). To achieve this goal, these countries can consider the following:

1. Investment in Renewable Energy: Policymakers and governments should prioritize substantial investments in the development and expansion of renewable energy sectors. This includes wind, solar, and hydroelectric power, which serve as viable alternatives to traditional independent electricity generation. The promotion of clean energy technologies not only acts as a strategic buffer against the adverse impacts of volatile oil prices on energy costs but also aligns with global efforts to reduce greenhouse gas emissions and combat climate change.

2. Energy Efficiency Initiatives: A crucial facet of achieving energy security and insulating economies from fluctuations in oil prices is the implementation of comprehensive energy efficiency initiatives. These initiatives should span industries, transportation networks, and households, focusing on optimizing energy consumption. By doing so, nations can not only mitigate their exposure to the economic repercussions of volatile oil prices but also contribute to the overarching goal of environmental sustainability. Energy efficiency measures represent a double-edged policy approach that fosters economic stability and ecological responsibility.

Diversify Industrial Base: Economic diversification is key to reducing vulnerability to the volatile nature of oil markets. Policymakers should prioritize strategies aimed at nurturing nonoil industries, such as information technology, healthcare, and manufacturing. This strategic diversification not only stimulates job creation but also bolsters economic resilience by diminishing reliance on sectors intricately linked to oil price dynamics. In a world marked by economic uncertainties, diversifying the industrial base becomes a pivotal step in securing robust and sustainable economic growth.

The practicality of suggesting financial broadening for oil-bringing in countries relies altogether upon their special monetary and international settings. In nations where political strength, institutional limit, and monetary assets are areas of strength for somewhat, progress towards environmentally friendly power and expanded ventures is more achievable. Such countries might have the essential foundation, administrative systems, and monetary abilities to help huge scope interests in environmentally friendly power projects and the advancement of nonoil areas. Furthermore, these nations might have a better climate for drawing in unfamiliar ventures, innovation moves, and skill in clean energy advancements. Be that as it may, the achievability is probably going to be dependent upon the accessibility of monetary assets and the political will to carry out significant approach changes.

Alternately, in countries confronting monetary or international difficulties, the proposal might experience huge obstructions. Nations with restricted monetary assets might battle to put considerably in environmentally friendly power framework or execute enormous scope energy productivity drives. International precariousness and administration issues can frustrate the powerful execution of strategies focused on financial enhancement. In addition, some oil-bringing in countries might confront obstruction from laid out businesses, especially those dependent on conventional energy sources, prompting political and financial opposition against expansion endeavors. The worldwide international scene, exchange conditions, and territorial financial elements can likewise impact the practicality of monetary broadening in various settings.

Possible difficulties or reactions of this suggestion might emerge according to different points of view. Cynics could contend that the underlying expenses of

changing to sustainable power and expanding ventures could be restrictive for certain countries, particularly those with restricted monetary limits. Pundits may likewise scrutinize the unwavering quality and adaptability of sustainable power sources, raising worries about the discontinuous idea of sunlight based and wind power and their capacity to satisfy the steady energy needs of industrialized economies. Also, opposition from existing businesses, especially those profoundly settled in customary energy sources, could present difficulties, as they could see expansion approaches as dangers to their financial advantages. At last, the international intricacies of worldwide energy markets, exchange conditions, and possible monetary counter from significant oil-trading countries may likewise present difficulties to the effective execution of financial expansion procedures. Tending to these difficulties requires cautious thought of every country's one-of-a-kind condition and the improvement of customized strategy systems that balance monetary, natural, and international contemplations.

6.2 Sovereign Wealth Funds for Oil Exporting Nations

Recommendation 2: Oil exporting nations should establish and effectively manage sovereign wealth funds to safeguard fiscal stability and promote long-term economic resilience (Çatık and Önder, 2013).

Key considerations include:

1. Fiscal Discipline: A fundamental aspect of prudent economic management involves the allocation of a portion of oil-derived revenues into sovereign wealth funds, particularly during periods of elevated oil prices. This strategic financial approach serves the dual purpose of providing a stable and reliable revenue stream when confronted with the inevitable downturns in oil markets while concurrently affording governments the capability to consistently allocate resources for crucial public services and developmental projects. By exhibiting fiscal discipline, nations can insulate their budgets from the inherent volatility of oil revenues, ensuring a sustainable financial footing in both times of plenty and scarcity.

2. Investment Diversification: To bolster the resilience of sovereign wealth funds and curtail their exposure to the unpredictable fluctuations of oil prices, governments should earnestly pursue diversification in investment portfolios. This

diversification extends beyond the confines of independent assets and ventures into a comprehensive exploration of opportunities within the global financial markets, real estate holdings, and various other asset classes. By expanding the breadth and depth of their investment domains, sovereign wealth funds can achieve enhanced stability and equilibrium, reducing susceptibility to the whims of the oil market. This strategic diversification not only safeguards the wealth of nations but also enables the nurturing of long-term financial prosperity.

3. Transparency and Accountability: The implementation of robust transparency and accountability measures is an imperative component of responsible sovereign wealth fund management. These measures act as safeguards against mismanagement and assure that the benefits of sovereign wealth funds are distributed equitably among the entire populace. The establishment of effective governance structures and the periodic conduct of comprehensive audits are pivotal in this regard. Transparency instills public confidence, while accountability ensures that wealth derived from natural resources is harnessed for the collective good. By fostering an environment of openness and financial responsibility, governments can channel the potential of sovereign wealth funds to foster economic development and social progress while preventing any potential misallocation or misuse of these critical assets.

The possibility of suggesting the foundation and compelling administration of sovereign abundance assets for oil-sending out countries fluctuates across various monetary and international settings. In monetarily stable and politically very much administered nations, the making of sovereign abundance reserves is more plausible. Such countries might have the monetary limit and institutional systems to carry out focused financial strategies, guaranteeing a part of oil-inferred incomes is reliably designated to these assets. Also, these nations might have the skill to broaden ventures around the world, alleviating chances related with oil cost unpredictability. Straightforward administration designs and responsibility components are bound to be laid out in politically stable conditions, cultivating public trust and guaranteeing the impartial dispersion of advantages got from sovereign abundance reserves.

Alternately, in monetarily or politically tested settings, the proposal might confront obstacles. Oil-sending out countries with more vulnerable administration designs might battle to implement financial discipline, gambling with misallocation

of assets and possible abuse of sovereign abundance reserves. Restricted monetary assets and expanded financial reliance on oil incomes can hinder the foundation of sizable sovereign abundance reserves. International vulnerabilities, local contentions, or administration issues might prevent the execution of straightforward administration designs and responsibility measures. Moreover, in nations where there is an absence of political will to focus on long haul monetary strength over transient gains, the foundation and viable administration of sovereign abundance assets might be met with obstruction.

Likely difficulties or reactions of this proposal might rise up out of different quarters. Pundits could contend that the production of sovereign abundance reserves requires a level of financial discipline and steadiness that is trying for some oil-trading countries, especially those confronting monetary or political vulnerabilities. Doubters might scrutinize the adequacy of enhancement procedures, communicating worries about the capacity of these assets to create reliable returns and alleviate monetary dangers. Also, issues connected with administration and straightforwardness might be argumentative, with pundits highlighting instances of botch or debasement previously. The perplexing idea of worldwide monetary business sectors, particularly during financial slumps, may likewise present difficulties to compelling speculation enhancement. Tending to these difficulties requires a customized approach for every country, taking into account its particular monetary and international setting, and focusing on administration, responsibility, and dependable financial administration.

6.3 Prudent Investment Strategies for Oil-Related Industries

Recommendation 3: Stakeholders in oil-related industries, including energy companies and investors, should adopt prudent investment strategies to navigate the volatile oil market effectively (Nusair and Olson, 2021).

Key considerations include:

1. Diversification of Portfolios: The imperative to mitigate exposure to the oscillations in oil prices necessitates a comprehensive strategy of portfolio diversification. This approach involves the judicious allocation of investments across a spectrum of sectors and asset classes, effectively reducing dependency on the

energy sector (Awartani et al., 2020). Beyond energy, diversified portfolios can encompass allocations in nonenergy sectors such as technology, healthcare, and infrastructure. By expanding their investment horizons, companies can navigate the changes in the energy market, fostering resilience and insulating their financial health from the precarious fluctuations of oil prices. A diversified portfolio not only safeguards wealth but also promotes stability and the potential for sustained growth.

2. Employment of Hedging Instruments: Mitigating the unpredictability of oil prices requires the astute deployment of hedging instruments and derivative contracts. These financial mechanisms serve as a crucial shield against the erratic nature of oil prices, offering companies operating within the energy sector the means to stabilize their revenue streams and minimize financial risk. Hedging instruments provide a valuable tool for managing the inherent exposure to volatile energy prices, ensuring a level of predictability and security that is indispensable for prudent financial planning. By incorporating such instruments into their financial strategies, companies can protect their bottom line, secure their financial stability, and make well-informed business decisions that are resilient in the face of oil market turbulence.

3. Embrace Environmental Responsibility: The paradigm of environmental responsibility assumes paramount significance in a world marked by evolving energy landscapes and growing sustainability concerns. Corporations must wholeheartedly embrace sustainable practices, investing in cleaner, more efficient technologies and environmentally responsible initiatives. This embrace of environmental responsibility is multifaceted, involving efforts to reduce the carbon footprint and environmental impact of their operations. Companies should adapt to the ongoing energy transition by exploring and investing in renewable energy opportunities. By fostering sustainability, corporations position themselves at the forefront of global efforts to combat climate change and contribute to a greener and more responsible energy ecosystem. This approach not only underscores corporate social responsibility but also positions businesses for success in a future where environmental sustainability is a pivotal driver of economic progress and consumer and consumer preference.

The attainability of suggesting judicious venture techniques for oil-related enterprises, including broadening of portfolios, work of supporting instruments, and embracing ecological obligation, is dependent upon the financial and international

settings in which these businesses work. In monetarily stable conditions, where enterprises have the monetary limit and admittance to assorted markets, the reception of expanded portfolios is more possible. Organizations can decisively designate ventures across areas, decreasing their dependence on the energy area and upgrading versatility against oil cost vacillations. The viability of this technique is, in any case, impacted by the accessibility of different speculation open doors, the soundness of monetary business sectors, and the generally financial environment.

The work of supporting instruments might confront difficulties in international settings set apart by vulnerabilities, exchange pressures, or administrative changes. Admittance to and the adequacy of supporting components can fluctuate in light of international elements, and ventures working in politically unsound districts might find it trying to really carry out these instruments. Moreover, organizations confronting monetary requirements or restricted admittance to monetary business sectors might experience hindrances in utilizing supporting methodologies. Embracing ecological obligation, while progressively perceived as essential, could confront obstruction in locales where natural guidelines are careless or not stringently implemented. In such settings, organizations could focus on transient financial additions over long haul manageability objectives, possibly prompting analysis from natural promotion gatherings and worries about the biological effect of their tasks.

Expected reactions of these suggestions could emerge from different quarters. Cynics might contend that expansion systems and supporting instruments are complicated and may not ensure security during outrageous market instability. Pundits may likewise scrutinize the financial reasonability of embracing natural obligation, particularly for enterprises generally dependent on non-renewable energy sources. Offsetting monetary security with ecological maintainability might be seen as a fragile compromise, with some contending that the expenses of progressing to cleaner innovations could offset the prompt advantages. Exploring these difficulties requires a thorough methodology, considering the particular monetary and international conditions of every industry and taking into account the potential compromises between momentary monetary profits and long-haul manageability.

6.4 Robust Social Safety Nets

Recommendation 4: Governments, particularly in oil-importing nations, should establish and enhance robust social safety nets to protect vulnerable segments of society from the negative effects of oil price volatility (Elafif et al., 2017). This includes:

1. Targeted Subsidies for Vulnerable Households: To counter the adverse consequences of escalating oil prices, it is imperative to institute precisely tailored subsidies that alleviate the financial burden on low-income households. These subsidies, primarily directed at essential commodities like food and fuel, serve as a crucial mechanism for shielding economically vulnerable segments of the population from the repercussions of oil price surges. The design of such subsidies must be characterized by precision, ensuring that they effectively reach those who are most in need. By doing so, governments can offer a lifeline to the disadvantaged, mitigating the detrimental impact of heightened oil prices on their daily lives and financial well-being.

2. Comprehensive Welfare Programs for Economic Resilience: The development and expansion of comprehensive welfare programs constitute a proactive response to the economic stress inflicted by the fluctuations in oil prices. These welfare programs encompass an array of support initiatives, including financial assistance, access to healthcare, and educational support. These multifaceted programs are strategically designed to provide a safety net for low-income individuals and families during times of economic turmoil stemming from oil price fluctuations. By ensuring that even the most vulnerable in society have access to financial stability, healthcare, and educational opportunities, these programs foster economic resilience, social equity, and a robust foundation for overall well-being.

3. Investment in Employment Initiatives: The adverse ripple effects of economic downturns triggered by oil price shocks necessitate a proactive approach in the form of investments in job creation programs and workforce development. Employment initiatives are a linchpin for mitigating the potentially devastating consequences of unemployment. By investing in these programs, governments and organizations bolster their capacity to weather the economic storm caused by oil market turbulence. These initiatives serve the dual purpose of job creation and

workforce enhancement, addressing both immediate employment needs and the long-term economic empowerment of individuals. In doing so, they contribute to the stability and resilience of the workforce, minimizing the disruption caused by oil price fluctuations.

The practicality of suggesting hearty social wellbeing nets, especially designated endowments for weak families, thorough government assistance projects, and interests in work drives, changes across various monetary and international settings. In financially stable countries with deep rooted social government assistance frameworks, executing and improving these wellbeing nets is more possible. These nations frequently have the monetary limit and institutional foundation to actually plan and execute designated appropriations that arrive at the weakest populaces. Complete government assistance programs, including monetary help, medical services, and instructive help, are likewise more reachable in financially prosperous conditions with an advanced social help system. Interests in business drives, for example, work creation projects and labor force advancement, may track down better footing in financially stable settings with lower international dangers, considering supported subsidizing and key preparation.

Be that as it may, in financially tested or politically unsound districts, the achievability of laying out and improving social wellbeing nets might be compromised. States confronting monetary limitations or elevated degrees of debasement might battle to execute designated endowments with accuracy, prompting possible abuse and shortcomings. Extensive government assistance projects could confront difficulties in locales where admittance to quality medical care and training is restricted, affecting the general viability of these security nets. Interests in business drives could be upset in international settings set apart by struggle or political flimsiness, where the center might move towards prompt security concerns as opposed to longer-term monetary turn of events.

Expected difficulties and reactions of these suggestions might emerge according to different points of view. Doubters might contend that designated sponsorships could make reliance and mutilate market elements if not carried out straightforwardly. Thorough government assistance projects could confront analysis for their expense and possible burden on open funds, particularly in areas with prior monetary difficulties. Some might contend that interests in work drives may be

deficient in resolving foundational issues and that a more comprehensive way to deal with monetary change is essential. Adjusting the requirement for social security nets with financial obligation and long-haul monetary manageability stays a mind-boggling challenge, requiring cautious thought of the extraordinary financial and international conditions in every specific situation.

6.5 Proactive Adaptation to the Ongoing Energy Transition

Recommendation 5: Policymakers, industries, and governments should adopt a proactive approach to adapt to the ongoing global energy transition (Kisswani, 2021). This approach encompasses:

1. Investment in Advanced Clean Energy Technologies: A visionary approach necessitates substantial investments in cutting-edge clean energy technologies. These forward-looking investments are geared towards accelerating the transition away from oil dependency, particularly by harnessing the potential of renewable energy sources like solar, wind, and hydroelectric power. The overarching goal is to establish resilient and sustainable energy systems that not only mitigate the vulnerabilities associated with oil but also uphold a commitment to environmental sustainability. By fostering innovation in these clean energy domains, economies can position themselves at the vanguard of the evolving energy landscape, driving both economic and ecological progress.

2. Promotion of Rigorous Energy Efficiency Standards: A pivotal facet of energy transformation involves the widespread promotion and enforcement of stringent energy efficiency standards and practices. This comprehensive approach spans diverse sectors, including manufacturing, transportation, and construction. Its fundamental objective is to engineer a reduction in overall energy consumption while concurrently curbing greenhouse gas emissions. By embracing energy efficiency as a cornerstone, economies champion sustainability, resource conservation, and environmental stewardship. This results in a virtuous cycle where economic productivity flourishes in harmony with ecological responsibility.

3. Synergy Between Economic Strategy and Environmental Responsibility: Strategic goals and policy frameworks should harmonize with environmental considerations, echoing a commitment to sustainable practices and

emissions reductions in line with international climate objectives. The nexus between economic strategy and environmental responsibility reinforces the imperative of integrating ecological considerations into the fabric of economic decision-making. Such alignment signifies an unwavering dedication to responsible resource utilization and minimizing the carbon footprint, thereby fortifying economies against the unpredictable undulations of the oil market and positioning them as stewards of global environmental goals.

4. Fostering a Culture of Technological Innovation: The encouragement of research and development in clean energy technologies, energy storage solutions, and sustainable transportation forms the bedrock of a resilient and forward-thinking economic landscape. By nurturing a culture of innovation, economies not only drive technological advancements but also remain agile and adaptable in the face of evolving energy paradigms. These innovations hold the potential to revolutionize energy production, storage, and consumption while concurrently diminishing dependence on oil. Consequently, they empower economies to meet the challenges of energy transition head-on and chart a trajectory towards sustainable, clean, and secure energy futures. The practicality of prescribing a proactive transformation to the continuous worldwide energy progress, remembering venture for cutting edge clean energy advances, advancement of thorough energy productivity guidelines, collaboration between monetary procedure and natural obligation, and encouraging a culture of mechanical development, shifts across various financial and international settings. In monetarily created countries with solid mechanical foundations and political security, it is more attainable to take on these actions. These nations frequently have the monetary ability to put resources into cutting edge clean energy innovations, implement rigid energy proficiency guidelines, and cultivate a culture of mechanical development. The arrangement of monetary technique with natural obligation may likewise be more attainable in these unique situations, given laid out administrative systems and public mindfulness.

Be that as it may, in financially tested or politically unsound locales, the practicality of these proposals might be compelled. Restricted monetary assets and political shakiness might ruin significant interests in cutting edge clean energy advancements and the requirement of thorough energy proficiency norms. International struggles or monetary emergencies might redirect consideration and

assets from these drawn-out drives. Moreover, encouraging a culture of mechanical advancement might confront difficulties in locales where innovative work capacities are immature or where there is an absence of institutional help for development.

Expected difficulties and reactions of these suggestions might emerge according to different points of view. Cynics might contend that the monetary expenses of changing to clean energy could be significant and may prompt employment misfortunes in customary energy areas. There could be obstruction from ventures that are intensely reliant upon customary energy sources. Pundits could likewise scrutinize the speed at which these changes are supposed to happen, particularly in districts where financial turn of events and energy foundation are slacking. Adjusting the requirement for a quick progress with the financial and international imperatives in every setting stays a perplexing test, requiring cautious thought and versatile techniques.

6.6 Data Monitoring and Analysis

Recommendation 6: Establish and maintain comprehensive data monitoring and analysis systems to track oil price movements, economic indicators, and market trends in real-time (Kisswani, 2021). These systems should be implemented by governments, financial institutions, and research organizations to enhance decision-making and policy formulation:

1. **Establishment of Early Warning Systems:** The creation and deployment of early warning systems is a solid tactic for mitigating the effects of oil price changes. These systems act as watchful sentinels, able to identify large and unexpected shifts in the price of oil very immediately. The fundamental goal of early warning systems is to provide governments and companies with the resources they need to act proactively in response to recognized changes. These tools help businesses and governments prepare for economic shocks by offering timely information and predictive analysis. By being so well prepared, economies can lessen the blow of unexpected spikes in oil prices and maintain their stability.
2. **Investment in Advanced Market Analytics:** Investment in advanced data analytics and predictive modeling is a key component of a holistic strategy.

These technical tools allow for more accurate and forward-looking predictions of oil price movements. Public and commercial organizations alike may profit from economies that have better risk assessment and management capabilities due to the use of these technologies. Predictive modeling allows companies to better anticipate and adapt to changing market situations. Decisions made by public authorities armed with this information may buffer economies from shocks and make them more resilient to oil price swings. This analytical skill helps keep the economy strong and stable.

3. **Heightened Transparency and Reporting:** In pursuit of effective oil price management, a key tenet involves enhancing transparency in reporting related to oil, market dynamics, and economic performance. This entails a commitment to the publication and dissemination of accurate, comprehensive, and timely information. Such transparency ensures that policymakers, stakeholders, and the public have unobstructed access to essential data. Access to this information allows for informed decision-making, the assessment of market conditions, and the evaluation of economic performance in the context of oil price fluctuations. This transparency not only bolsters trust but also fosters economic resilience through well-formed strategic responses.

The feasibility of establishing and maintaining comprehensive data monitoring and analysis systems to track oil price movements, economic indicators, and market trends in real-time, as recommended, depends on the economic and geopolitical context. In economically developed and politically stable regions, the implementation of sophisticated data monitoring systems is more feasible. These areas often have the necessary technological infrastructure, skilled workforce, and financial resources to invest in advanced market analytics and early warning systems. Governments and financial institutions in such contexts may be more inclined to prioritize transparency and reporting to support informed decision-making.

However, in economically challenged or politically unstable regions, the feasibility of implementing these recommendations may be limited. Limited financial resources, technological infrastructure, and political instability can hinder the establishment of advanced data monitoring systems. Geopolitical conflicts may also impact the transparency and accuracy of reported data. In such contexts, there may

be challenges in acquiring, processing, and disseminating real-time information, which is crucial for effective decision-making and policy formulation.

Potential challenges and criticisms of these recommendations may include concerns about the costs associated with implementing and maintaining advanced data monitoring systems, especially in regions with constrained budgets. There might be resistance from entities that are not accustomed to transparent reporting, as it may expose vulnerabilities or inefficiencies. Privacy and data security concerns may also arise, requiring careful attention to safeguarding sensitive information. Additionally, the effectiveness of these systems may be questioned if there is a lack of trust in the institutions responsible for managing and disseminating the data. Balancing the benefits of enhanced transparency and real-time data monitoring with the practical challenges and potential criticisms remains essential for the successful implementation of these recommendations.

6.7 Research and Development in Energy Transition

Recommendation 7: Prioritize research and development (RandD) efforts in energy transition technologies to stay ahead in the global shift toward cleaner and more sustainable energy sources:

1. **Fostering Innovation Through Incentives:** An effective strategy entails the provision of incentives and substantial funding opportunities for a wide array of entities, including private companies, esteemed universities, and research institutions. These incentives are designed to stimulate robust research and development (RandD) activities within the realms of renewable energy, energy storage solutions, and cutting-edge carbon capture technologies. By fostering an environment where innovation is both financially attractive and technologically advantageous, economies catalyze advancements that are fundamental to the ongoing energy transition. This strategic investment in RandD enhances economic competitiveness, stimulates economic growth, and ushers in a sustainable energy paradigm.
2. **Nurturing Global Collaboration in RandD:** The progression towards a sustainable energy landscape necessitates international collaboration on research and development (RandD) initiatives. Encouraging such cooperative

ventures ensures the pooling of knowledge, expertise, and resources, thereby expediting innovation and broadening the collective understanding of energy transition challenges. By fostering open channels for the exchange of ideas and shared projects across borders, economies bolster their innovation capacities and contribute to the global pool of clean energy solutions. This collaboration not only accelerates the clean energy industry's growth but also enhances the worldwide drive toward sustainable practices and economic growth.

3. **Investing in Education and Skill Development:** To facilitate the expansive growth of the clean energy sector and ensure a workforce equipped for the future, a comprehensive strategy involves investing in education and skill development initiatives. This includes the development of educational programs and workforce training geared towards preparing individuals for careers in the clean energy industry. By nurturing a skilled and adaptable workforce, economies not only create new job opportunities but also guarantee that they possess the human capital required to drive the transition towards cleaner and more efficient energy systems. This multifaceted approach supports economic growth while securing a sustainable energy future.

The achievability of focusing on innovative work (RandD) endeavors in energy change advancements, alongside cultivating advancement through motivators, supporting worldwide coordinated effort in RandD, and putting resources into training and expertise improvement, relies upon the financial and international setting of every locale. In monetarily created and politically stable locales, the achievability is for the most part higher. These regions frequently have the monetary ability to give impetuses to RandD, deeply grounded research foundations, and instructive framework to help expertise advancement. States in such settings might focus on reasonable turn of events and perceive the drawn-out financial advantages of putting resources into clean energy advancements.

Nonetheless, in financially tested or politically unsteady areas, the achievability of executing these suggestions might confront obstructions. Restricted monetary assets could ruin the arrangement of motivations and financing for innovative work. Furthermore, international contentions might influence worldwide

coordinated effort on RandD drives. Schooling and expertise improvement projects might confront difficulties in areas with more vulnerable instructive foundation or where the quick spotlight is on tending to essential monetary necessities. Also, social, administrative, or political obstructions might block the quick reception of clean energy advances in specific districts.

Expected difficulties and reactions could incorporate worries about the allotment of assets, particularly in areas confronting earnest financial or political emergencies. Suspicion about the adequacy of worldwide coordinated effort and the apparent advantages of putting resources into clean energy could likewise emerge. Adjusting transient monetary needs with long haul manageability objectives represents a critical test. Also, there could be protection from change from businesses vigorously dependent on conventional energy sources. Tending to these difficulties requires a thorough and setting explicit methodology, considering the extraordinary conditions of every district.

6.8 Global Cooperation and Trade Agreements

Recommendation 8: Foster global cooperation and establish trade agreements that account for the evolving energy landscape and its impact on economic growth:

1. **Promotion of Renewable Energy Exports:** A strategic economic approach involves fostering international trade in renewable energy technologies and components. This concerted effort is geared towards not only expanding the domestic clean energy industry but also promoting the export of cutting-edge clean energy solutions. By leveraging global markets and international collaboration, economies can enhance their economic growth prospects while simultaneously contributing to a cleaner and more sustainable energy landscape worldwide. The exchange of renewable energy resources and technology bolsters the growth of the clean energy sector, augments job creation, and supports economic resilience, ultimately diminishing reliance on oil-derived energy sources.
2. **Commitment to Climate-Centric Agreements:** A comprehensive strategy involves active participation in international agreements that emphasize

climate-conscious policies and practices. By aligning economic policies with environmental preservation goals, economies demonstrate a resolute dedication to sustainability and environmental conservation. These climate-focused accords incentivize and prioritize sustainable energy practices. Through this alignment, economies take on the dual role of economic leaders and ecological stewards, fostering environmentally responsible practices, emissions reduction, and sustainable economic growth.

3. **Collaboration in Energy Security Partnerships:** In a world marked by unpredictable oil price fluctuations and supply disruptions, the establishment of robust energy security partnerships is paramount. These strategic alliances encompass collaboration between energy-producing and energy-importing nations, with a shared goal of ensuring collective energy security and stability. By working together, economies can mitigate the adverse impacts of oil market turbulence, enhance supply chain resilience, and maintain a consistent energy supply. The synergy within these partnerships fortifies economic stability, bolsters national security, and reduces the vulnerability of economies to geopolitical or economic shocks related to oil, safeguarding growth trajectories and enhancing economic resilience.

These suggestions include an all-encompassing way to deal with tending to the difficulties and open doors emerging from oil cost variances and the continuous energy change. By carrying out these procedures, legislatures, ventures, and associations can proactively explore the intricacies of the worldwide energy scene while advancing financial development and maintainability.

The attainability of cultivating worldwide collaboration and laying out economic deals that record for the developing energy scene relies upon the financial and international settings of partaking countries. In financially evolved and politically stable districts with a common obligation to manageability, such collaboration is more possible. These areas might have laid out systems for worldwide cooperation and economic alliance that consolidate ecological contemplations. Also, countries with cutting edge sustainable power advances might find it more straightforward to advance commodities in the worldwide market, adding to financial development while lining up with clean energy objectives. Obligation to environment driven arrangements is probably going to be more

grounded in locales where natural cognizance is high, further working with joint effort on economical energy rehearses.

Notwithstanding, difficulties and reactions might emerge in areas with clashing monetary needs, varying ecological norms, or international pressures. Monetary contemplations, protectionist arrangements, and worries about work dislodging in conventional energy areas could upset the advancement of sustainable power trades. In a few international settings, trust issues and clashing public interests might obstruct the foundation of significant environment driven arrangements. Finding some kind of harmony between monetary development and natural stewardship can be testing, particularly in districts vigorously dependent on conventional energy sources. Additionally, exploring complex worldwide energy security associations might be testing on the off chance that international strains eclipse the common objective of guaranteeing aggregate energy security.

Pundits could contend that these proposals put an excessive weight on specific economies, especially those with restricted assets to put resources into environmentally friendly power advancements. Also, worries about the adequacy of peaceful accords in accomplishing unmistakable outcomes and tending to prompt financial requirements could be raised. Fruitful execution would require political artfulness, powerful correspondence, and an acknowledgment of the assorted difficulties and needs across various financial and international settings.

7. CONCLUSION

This chapter synthesizes the extensive exploration of the complex relationship between fluctuations in oil prices and economic growth. It captures the overarching findings, policy implications, limitations, and avenues for future research. This study embarked on a careful analysis of the multifaceted interplay between oil price dynamics and economic growth. The examination traversed diverse dimensions, delving into transmission mechanisms, causal relationships, asymmetries, sectoral sensitivities, and the profound impact on government finances. The exploration explained various findings, which include:

Transmission Mechanisms: Changes in oil prices ripple through an economy via intricate mechanisms. These encompass the influence on input costs, consumer spending, inflation, trade balances, monetary policies, investment attitudes, income inequality, and government revenues (Khan et al., 2019).

Causal Relationships: The empirical evidence indicates a statistically significant causal relationship between fluctuations in oil prices and subsequent changes in economic growth. While the direction of causality varies across different contexts, it underscores the profound impact of oil price fluctuations on economic trajectories.

Asymmetries and Nonlinearities: The relationship between oil prices and economic growth is not always linear. Asymmetrical patterns exist, and fluctuations in oil prices do not uniformly impact economies in times of boom or bust. The nuances of these asymmetries warrant attention, as they hold implications for risk management and policy interventions (Kisswani, 2021).

Sectoral Sensitivities: Distinct economic sectors demonstrate varying levels of susceptibility to changes in oil prices. Sectors such as manufacturing, transportation, and government finances exhibit different sensitivities, underlining the need for tailored strategies to navigate the impacts (Johnstone et al., 2019).

Policy Insights: The findings provide meaningful policy insights. Policymakers are equipped with the knowledge to formulate strategies that enhance economic resilience in the face of oil price volatility. The dynamics of the ongoing global energy transition have implications for policy formulation, especially regarding environmental considerations and energy security.

Interplay with Environmental Concerns: The oil market's intricate relationship with environmental and social dimensions is notable. Environmental repercussions, income inequality, and sustainability challenges underscore the necessity of considering broader societal implications in economic decision-making (Bessler et al., 2023).

The insights derived from this research have profound policy implications for governments, industries, and institutions seeking to navigate the volatile terrain of oil markets and foster resilient economies:

Economic Resilience: Policymakers should prioritize strategies that enhance economic resilience to oil price fluctuations. Diversification of sectors, investment in renewable energies, and the creation of fiscal buffers are essential to mitigate risks.

Sustainable Energy Transition: The ongoing global shift toward cleaner energy sources requires governments and businesses to adapt their strategies and investments. Policymakers should create an enabling environment for renewable energy technologies and sustainable practices.

Sector-Specific Interventions: Recognizing that different sectors are impacted differently by oil price changes, sector-specific interventions, and support mechanisms are needed to maintain stability in areas most vulnerable to oil market volatility.

Environmental Considerations: Policymakers should incorporate environmental considerations into energy policies, aiming to balance economic growth with environmental sustainability. This includes supporting energy efficiency measures and initiatives to reduce the carbon footprint.

Income Inequality Mitigation: Strategies to address income inequality, especially during periods of oil price volatility, should be part of the policy agenda. Social safety nets and targeted programs can help reduce disparities in income distribution.

Risk Management: Investors and financial institutions must incorporate a nuanced understanding of the economic growth relationship into their risk management strategies (Kisswani, 2021). This includes considering the potential impact of oil price fluctuations on investment decisions.

Limitations

It is essential to acknowledge the limitations of this research. The intricate relationship between oil prices and economic growth is influenced by a multitude of dynamic factors that may not have been entirely captured or considered within the scope of this study. The following limitations are worth noting:

Data Limitations: The accuracy and availability of data can affect the quality of empirical analysis. Some data may be subject to revisions or may not capture the full extent of the economic growth relationship.

Contextual Variations: The relationship between oil prices and economic growth is context-specific and can vary across countries and regions. This research offers a generalized analysis and may not fully encapsulate all regional idiosyncrasies.

Complexity of Variables: The interplay between oil prices and economic growth is influenced by various external factors, and the study might not account for all variables that could play a role in this relationship.

Forecasting Challenges: Predicting oil prices and their impact on the economy is a formidable challenge. This study primarily focuses on historical patterns and relationships, and extrapolating future scenarios is inherently uncertain.

Energy Transition Complexity: The ongoing global energy transition introduces new dynamics to the economic growth relationship. The full extent of these changes may evolve over time and necessitate continued research.

Future Research Avenues

While this study has contributed to the understanding of oil price fluctuations and their impact on economic growth, several avenues remain for future research:

Advanced Econometric Models: Future research could employ more advanced econometric models to explore the intricate relationship, capturing nonlinearities and complexities more comprehensively.

Environmental Analysis: In-depth analysis of the environmental implications of oil price fluctuations and economic growth, including the assessment of policies aimed at mitigating environmental impacts.

Energy Transition Dynamics: As the world shifts towards renewable energy, research can delve deeper into how this transition influences the oil economic growth relationship, particularly in oil-producing nations.

Geopolitical Analysis: A more granular analysis of the role of geopolitical tensions in driving oil price fluctuations and their subsequent economic impacts.

Comparative Studies: Comparative studies across countries and regions could offer insights into how unique contexts shape economic growth dynamics.

Risk Management Strategies: Further exploration of risk management strategies for investors, industries, and governments facing oil market volatility.

Income Inequality Dynamics: In-depth studies on the relationship between oil price fluctuations and income inequality, with a focus on policy measures for inequality mitigation

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RESUME

Ayat Basim Hasan AL-MUSAWI

EDUCATION:

- B.Sc. in Petroleum Engineer, Basra University, 2015
- MSc in Engineering Management, Istanbul Gedik Univ, 2023

COMPUTER SKILLS:

Prosper Software, MSWord, MS Excel, MS PowerPoint, Microsoft Outlook Emails

Memberships:

A membership of Iraqi Engineering Union since 2015

TRAINING:

- Field Training Course – South Oil Company (SOC) - (Basra – Iraq). In Iraqi drilling company From August 1st, 2014 till Sept 1st, 2014·
- OSHA Course (Occupational Safety& Health Administration)
- Training course (6 months)- Oilserv camp - design of production optimization programs and well sketch.

Work Experience (Oil and Gas)

Zubair Oil Field - ENI Camp (January 2016 – December 2020):

- **Position**: Cost and Contracts Engineer
- Contract evaluation, invoices check, Track the progress of contracts (projects cost)
- **Position**: Production Optimization engineer (2016 -2020)

Job Description: work on coiled tubing and bullhead (rig and rigless) to improve production processes such as (ESP Acid flash, organic solvent, Hydraulic fracture... etc.). Design well production modelling using PROSPER.

I worked in several oil sites in Alburjesyah with an oil service comp. and I've implemented a lot of hard jobs like (Cementing job in ZB-341) which is done for the first time in that area and I got a letter of appreciation from the general director on it.

ANR-(General trading and services company L.L.C) IRAQ BRANCH (2014 – Sep. 2015):

Position: Project Engineer Assistant

Job Description: In charge of gathering worksite data to be reported to company project manager and client's facility manager at Baker Hughes campsite in North Rumaila oil field.

Knowledge, Skills & Abilities

- Design Outflow (VLPs) Model, Inflow (IPRs) Model by Prosper
- MS Office, Word, Outlook Express, Photoshop, Excel, Microsoft Project.
- PC platform computers on MS-DOS, Windows 98, and Typing speed of 56wpm
- Solid communication and organizational skills
- Leadership Skills as the ability to take initiative; work independently or as a team player
- Ability to multi-task/handle deadlines in a high-stress environment.
- Expert level in spoken and written Arabic and English
- Good knowledge of (Windows, Excel, Word, Internet, and Outlook).
- engineering drawing by hand and by AUTOCAD