

**T.C.
SAKARYA UNIVERSITY
INSTITUTE OF SOCIAL SCIENCES
DEPARTMENT OF ISLAMIC ECONOMICS AND FINANCE**

**IMPACT OF OIL PRICES AND EXCHANGE RATE
FLUCTUATIONS ON ISLAMIC AND CONVENTIONAL STOCKS:
COMPARATIVE STUDY OF TURKIYE AND RUSSIA**

Ömer Faruk UYSAL

MASTER'S THESIS

Supervisor: Asst. Prof. Dr. Shabeer KHAN

MAY - 2023

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“This thesis was defended hybrid on 26/05/2023 and was unanimously accepted by the jury members whose names are listed below.”

JURY MEMBERS	OPINION
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Assit. Prof. Dr. Hakan ASLAN	Başarılı
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Ömer Faruk UYSAL

26/05/2023

THE PREFACE

Finding a link between an economy's oil trade position, oil prices, exchange depreciation, and the performance of its stock market is the main goal. Oil prices' effect is expected to be opposite according to a nation's status as an oil importing or exporting country. One other thing we are willing to analyze in this study is exchange rate depreciation's effect on both Islamic and traditional stock markets. So what we are looking for in our comparison is for nations, which we will compare, to have both Islamic and traditional stock, to experience high exchange rate depreciation, to be one side importing and the other side exporting oil, and finally to be similar in other aspects. For these criteria, we have picked Russia and Turkiye as subjects for our economic study. Russia and Turkiye are good subjects because both are quite similar in their positions in the international arena, as they are both stuck between the East and the West. Both have faced high exchange rate depreciation in recent years.

The study will use econometric models to estimate the given hypothesis. But other than that, international policies, and economic circumstances that may affect the link between the variables will also be taken into consideration. The results of this study will advance our understanding of the relationship between oil trade, exchange rate, and stock market performance and offer new perspectives that might prove useful to business owners, policymakers, and investors. The study's findings will clarify the intricate links between various economic factors, assisting in the direction of financial and economic decision-making in the process.

As a sign of respect, I would like to thank my advisor Dr. Shabeer Khan and Dr. Mohammad Rahim Shahzad, for guiding and helping me where I am stuck in my thesis writing process. I would like to thank my colleagues for motivating me during this period. Most importantly, I would like to thank my wife for putting up with my focusing continuum.

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26/05/2023

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ABBREVIATIONS

BMI	: S&P Russia BMI Shariah (USD) - Last
etc.	: et cetera
Lira	: USD/TRY - US Dollar Turkish Lira
M.F.A.T.	: Republic of Türkiye Ministry of Foreign Affairs
MSCIRs	: MSCI Russia Index -Last
MSCITr	: MSCI Turkiye Index - Last
MSCITrIsl	: MSCI Turkiye Islamic Index - Last
Oil	: Oil_PX_LAST
QVAR	: Quantile Vector Autoregression
Ruble	: USD/RUB - US Dollar Russian Ruble
Russia	: Russian Federation
Turkiye	: Republic of Turkiye
USD	: United States dollar
VAR	: Vector Autoregression
W.F.	: Wikimedia Foundation
WTI	: West Texas Intermediate

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ÖZET

Başlık: Petrol Fiyatları ve Döviz Kuru Dalgalanmalarının İslami ve Geleneksel Hisse Senetleri Üzerindeki Etkisi: Türkiye ve Rusya Üzerine Karşılaştırmalı Bir Çalışma

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Çalışma, bir ekonominin petrol ticareti pozisyonu, petrol fiyatları, döviz kurundaki değer kaybı ile geleneksel ve İslami hisse senedi piyasasının performansı arasında bir bağlantı bulmaya çalışmaktadır. Çalışma bunu yapmak için yaygın olarak kullanılan iki ekonometrik model kullanmaktadır. Bunlardan biri kuantil bağlantılılık yaklaşımı, diğeri ise dalgacık tutarlılığıdır. Dalgacık tutarlılığı ikili korelasyonların daha derinlemesine anlaşılmasını sağladığından, cevaplarımızı burada buluyoruz. İthalatçı ve ihracatçı ülkelerin ikamesi olarak Rusya ve Türkiye seçilmiştir. Çünkü her ikisi de Doğu ve Batı arasında sıkışıp kaldıkları için uluslararası arenadaki konumları oldukça benzerdir. En önemlisi; her ikisi de son yıllarda yüksek döviz kuru değer kaybıyla karşı karşıya kalmıştır ve her ikisi de İslami endekslere sahiptir. Sonuçlar, beklenenden farklı olarak, ülkenin petrol ithal ettiği durumlarda petrol fiyatlarının hisse senedi piyasalarını etkilemediğini göstermektedir. Ancak ülke Rusya gibi petrol ihraç ediyorsa, petrol fiyatları döviz kuru ve hisse senedi piyasaları ile doğrudan korelasyona sahiptir. Döviz kurundaki değer kaybının her iki ülkenin hisse senedi piyasaları üzerinde yüksek korelasyon gösterdiği tespit edilmiştir. Değişkenler arasındaki bağlantıyı etkileyebilecek uluslararası politikalar ve ekonomik koşullar da dikkate alınmıştır. Bu çalışmanın sonuçları petrol ticareti, döviz kuru, geleneksel borsa ve İslami borsa arasındaki ilişkiyi daha iyi anlamamızı sağlamaktadır.

Anahtar Kelimeler: Petrol Fiyatları, Döviz Kuru, Geleneksel Hisse Senedi Piyasası, İslami Hisse Senedi Piyasası, Ekonometri

ABSTRACT

Title of Thesis: Impact of Oil Prices and Exchange Rate Fluctuations on Islamic and Conventional Stocks: Comparative Study of Turkiye and Russia

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Study tries to find a link between an economy's oil trade position, oil prices, exchange rate depreciation, and the performance of its traditional and Islamic stock market. The study uses two widely used econometric models to do so. One being quantile connectedness approach, and the other being wavelet coherence. As wavelet coherence gives deeper understanding of pairwise correlations, we find our answers there. Russia and Turkiye were picked for substitutes for importing and exporting countries. Because both are quite similar in their positions in the international arena, as they are both stuck between the East and the West. Most importantly; both have faced high exchange rate depreciation in recent years, and they both have Islamic indices. And the results show that different from what was expected, oil prices do not affect the stock markets when the country is importing oil. But if the country is exporting oil like Russia the oil prices have direct correlation with the currency exchange rate and stock markets. Exchange rate depreciation has been found to be highly correlated on both country's stock markets. International policies, and economic circumstances that may affect the link between the variables was also taken into consideration. The results of this study advances our understanding of the relationship between oil trade, exchange rate, traditional stock market and Islamic stock market.

Keywords: Oil Prices, Exchange Rate, Conventional Stock Market, Islamic Stock Market, Econometrics

INTRODUCTION

In summary, this study aims to explore the connections between an economy's oil trade position, oil prices, exchange depreciation, and the performance of its conventional / Islamic stock market. By examining Russia and Turkiye as case studies, employing the Wavelet coherence and quantile network connectedness approach, and considering relevant international policies and economic circumstances, this research seeks to offer valuable insights for decision-makers and contribute to the advancement of financial and economic understanding.

Importance of Research

Understanding the complex interplay between an economy's oil trade position, oil prices, exchange rate depreciation, and the performance of its stock market is of paramount importance for business owners, policymakers, and investors. This study aims to investigate these relationships, shedding light on the intricate links between various economic factors and providing valuable insights for decision-making processes.

Subject of Research

The effect of oil prices on a nation's stock market is expected to differ based on its status as an oil importing or exporting country. The anticipated impact of oil prices will be opposite for these two categories. Additionally, this study seeks to analyze the influence of exchange rate depreciation on both Islamic and traditional stock markets, exploring potential variations in their responses.

To facilitate a comprehensive comparison, the selected nations for this economic study are Russia and Turkiye. These countries possess several key characteristics that make them suitable subjects. Both Russia and Turkiye occupy a unique position in the international arena, positioned between the East and the West. Furthermore, both countries have experienced significant exchange rate depreciation in recent years.

Method of Research

The study will employ econometric models, with a specific focus on the Wavelet coherence and quantile network connectedness approach, to estimate the proposed

hypotheses. However, the analysis will not be limited to econometric models alone. It will also consider international policies and economic circumstances that may influence the relationship between the variables under investigation.

Purpose of Research

The findings of this study are expected to advance our understanding of the complex relationship between oil trade, exchange rates, and conventional / Islamic stock market performance. By offering new perspectives and insights, this research will provide valuable guidance to business owners, policymakers, and investors. Moreover, clarifying these intricate links between various economic factors will contribute to more informed financial and economic decision-making processes.

Structure of Research

This study focuses on investigating the intricate relationships between an economy's oil trade position, oil prices, exchange depreciation, and the performance of its conventional / Islamic stock market. By addressing this important research problem, the study aims to contribute valuable insights and advance our understanding of the interplay between these economic factors. The following 5 sections will outline the specific components of the study, including the introduction, the literature review, methodology, results/discussion, and concluding remarks with recommendations.

On the research objectives and focus section the problem statement, research objective and study focus will be covered. The study aims to identify the link between an economy's oil trade position, oil prices, exchange depreciation, and the performance of its conventional / Islamic stock market. Specifically, it seeks to explore how oil prices affect the stock market differently for oil-importing and oil-exporting nations. Additionally, the study aims to examine the impact of exchange rate depreciation on both Islamic and traditional stock markets. On the study focus section each factor of the observed correlation will be examined much closer.

The literature review section will provide a comprehensive overview of the existing theoretical and empirical studies related to the relationship between an economy's oil trade position, oil prices, exchange depreciation, and conventional / Islamic stock market

performance. This review will highlight the key theories, concepts, and findings that have shaped the understanding of these economic factors.

In this section, the study will delve into the theoretical frameworks and models that underpin the relationship between an economy's oil trade position, oil prices, exchange depreciation, and conventional / Islamic stock market performance. Theoretical concepts will be explored to provide a solid foundation for the empirical analysis. Also in this section we will review the existing empirical studies that have examined the relationship between an economy's oil trade position, oil prices, exchange depreciation, and conventional / Islamic stock market performance. This review will highlight the methodologies, data sources, variables, and findings of previous research, providing insights into the empirical evidence and identifying gaps for further investigation and the anticipated value addition of the study.

The methodology section will describe the data then the approach and techniques used to analyze the research problem. In this section, the sources of data used in the study and the specific variables considered for analysis. In this study, a combination of macroeconomic data, financial market data, and oil trade data will be utilized. The sources of data will be carefully selected to ensure reliability and representativeness. This includes relevant stock market indices or indicators that reflect the performance of the stock markets in Russia and Turkiye. The study will consider the price of oil as a crucial variable, as fluctuations in oil prices can significantly impact economies and financial markets. Exchange rate depreciation will be measured using appropriate exchange rate indices or metrics that capture the depreciation of the local currency. In this section we will cover the econometric models, specifically utilizing the Wavelet coherence and quantile network connectedness approach, to estimate the proposed hypotheses. The section will provide a detailed explanation of the methodology and justify its suitability for addressing the research objectives.

In the results and discussion section, the findings of the empirical analysis will be presented and interpreted. The section will outline the statistical results, including the estimated coefficients, significance levels, and any other relevant statistical measures. These results will be discussed in the context of the research objectives and existing theoretical and empirical literature. The discussion will focus on explaining the

implications of the findings and their alignment with or deviation from previous research. It will also address any unexpected or interesting patterns observed in the data. The section may include graphical representations, tables, or charts to enhance the understanding of the results.

The final section of the study will present the conclusions drawn from the research findings. It will summarize the key insights and contributions made by the study regarding the relationship between an economy's oil trade position, oil prices, exchange depreciation, and conventional / Islamic stock market performance. The section will restate the research objectives and discuss how the findings have addressed these objectives.

Based on the conclusions, the study will provide practical recommendations for business owners, policymakers, and investors. These recommendations may focus on strategies for managing the impact of oil prices, exchange rate depreciation, and oil trade position on conventional / Islamic stock market performance. Additionally, avenues for further research and potential areas of exploration will be suggested to advance the understanding of this complex relationship.

In summary, this study will employ a comprehensive methodology to examine the relationships between an economy's oil trade position, oil prices, exchange depreciation, and conventional / Islamic stock market performance. By utilizing appropriate data, conducting econometric analyses, and considering various variables, the study aims to provide valuable insights and contribute to the existing body of knowledge in this field.

Contributions of Study

The contribution of this study is significant for several reasons. Firstly, it aims to investigate the relationship between a country's oil trade status and the performance of its stock market indexes, both traditional and Islamic.

Secondly, it aims to consider the impact of oil prices and exchange rate fluctuations on stock market indexes, both traditional and Islamic. Additionally, the study will reveal deeper information on the correlation of these variables on different times, different quantiles and different frequencies.

Thirdly, the study will give a comparative look into Islamic and conventional stocks to have a deeper understanding of Islamic stocks unique behavior. If there is a unique behavior, we will be also comparing these movements country wise.

Fourthly, the study will examine various factors that may impact a country's economy and its stock market performance, including international conditions, domestic problems, economic advancements and crises. This investigation will enhance our understanding of the intricate relationships between different economic variables and external factors, providing insights that could help decision-makers navigate the complexities of the financial and economic landscape.

In addition to the general contributions mentioned earlier, this study also focuses specifically on the countries of Turkiye and Russia. This targeted approach will provide a more nuanced understanding of the relationship between oil trade and stock market performance in these specific contexts, which could have implications for policymakers and investors in Turkiye and Russia.

Furthermore, this study employs advanced econometric models, allowing for a more rigorous analysis of the data. The econometric models are a widely used wavelet coherence model and quantile network connectedness approach (QVAR).

Overall, this study's contribution is significant, as it will add to our understanding of the complex relationships between oil prices, exchange rate and stock market performance, both Islamic and conventional, ultimately helping to guide decision-making in the fields of finance and economics. This approach recognizes the importance of analyzing different types of financial instruments and highlights the potential implications of oil trade on both traditional and Islamic financial markets. Study's targeted focus on Turkiye and Russia, advanced modeling, consideration of multiple factors, and inclusion of both traditional and Islamic stocks all contribute to a more comprehensive understanding of the relationship between oil trade, exchange rate and conventional / Islamic stock market performance. By doing so, it will provide valuable insights into the complex interplay of economic factors that impact the stock market, which could be useful for investors, policymakers, and businesses.

SECTION 1: RESEARCH OBJECTIVES AND FOCUS

1.1. Problem Statement

The relationship between oil prices relevant to a country's status as an oil importer or exporter, exchange rate depreciation, and its stock market indexes, specifically the traditional and Islamic stock market indexes, is the problem statement being investigated. The problem can be divided into sub-problems such as: Is there a relationship between oil prices relevant to a country's oil-importing or exporting status and a country's both Islamic and traditional stocks? Another sub-problem would be: is there a relationship between exchange rate depreciation and a country's both Islamic and traditional stocks?

The hypotheses of this study, according to these questions, would be:

The first hypothesis of this study is that oil prices have positive response on traditional stock market in Russia. The second hypothesis of this study is that oil prices have positive response on Islamic stock market in Russia. The third hypothesis of this study is that oil prices have negative response on traditional stock in Turkiye. The fourth hypothesis of this study is that oil prices have negative response on Islamic stock in Turkiye. The fifth hypothesis of this study is that exchange rate fluctuations have a negative response on Russia's traditional stock market. The sixth hypothesis of this study is that exchange rate fluctuations have a negative response on Russia's Islamic stock market. The seventh hypothesis of this study is that exchange rate fluctuations have a negative response on Turkiye's traditional stock market. The eighth hypothesis of this study is that exchange rate fluctuations have a negative response on Turkiye's Islamic stock market. The mentioned hypotheses above are related to our wavelet coherence model because wavelet coherence model does a pairwise test. So, the results from the model are expected to be pairwise between the variables. Not all pairs are included in the research objective, for example tests are not done across countries. Hypotheses for oil exchange rate or stock markets correlation between each other are not included.

Hypotheses related to network connectedness are two; the first hypothesis is Ruble's exchange rate fluctuations have high connectivity with both Islamic and traditional stock market. The second hypothesis is Lira's exchange rate fluctuations have high connectivity with both Islamic and traditional stock market. The results across countries for exchange

rate are not expected to be different. Because exchange rate is not expected to be influenced by the countries status. And the movements of both Islamic and conventional stock market are not expected to be different across all hypotheses because the stock markets are expected to behave parallel. The research may consider investigating other factors such as international relations, trade policies, economic conditions, etc. that may impact a country's stock market performance.

1.2. Research Objectives

As good representatives of oil-importing and exporting countries, the study will further use Turkiye and Russia as substitutes for other countries. The reason why is that Turkiye and Russia are quite similar in many cases like international relations, having a strong leader figure, facing high exchange rate depreciation etc. The importance of these two countries will be explained further in the study. As we come back to the purpose of this study, the purpose is to conduct a comparative analysis of the impact of oil prices and exchange rate fluctuations on the performance of the Islamic and traditional stock markets in Turkiye and Russia.

The study aims to analyze the importance of exchange rates in predicting the performance of the traditional and Islamic stock markets in Russia and Turkiye. Compare how the price of oil affects the performance of the traditional and Islamic stock markets in Russia and Turkiye. Examine the links between oil prices, currency exchange rates, and traditional and Islamic stock markets in both nations between 2008 and 2021. Analyze the extent to which variables other than oil prices and exchange rates affect the performance of the Islamic and traditional stock markets in Turkiye and Russia. Create suggestions for investors and decision-makers on how to manage the effects of changing oil prices and currency exchange rates on the Turkish and Russian stock markets, both Islamic and traditional.

By achieving these goals, the study hopes to advance knowledge of the similarities and differences between the effects of changes in exchange rates and oil prices on the traditional and Islamic stock markets in Turkiye and Russia. Additionally, the study aims to offer insightful information for investors and decision-makers navigating these nations' complex economic environments.

1.2.1. Researching the Impact of Oil and Exchange Rates on the Conventional Stock of Turkiye

One of the goals of this research is to determine how the performance of Turkiye's traditional stock market is impacted by oil prices and currency fluctuations.

The study aims to determine how much the performance of Turkiye's traditional stock market is impacted by the depreciation of the lira exchange rate. Evaluate the significance of the oil price as a predictor of the traditional stock market's performance in Turkiye. Examine the relationship between the oil price, the lira exchange rate, and the traditional stock market of Turkiye from 2008 to 2021. Make suggestions on how to effectively manage the effects of oil prices and exchange rates on the traditional stock market of Turkiye for investors and decision-makers.

By achieving these goals, this study hopes to advance knowledge of the elements that affect the performance of Turkiye's traditional stock market. Additionally, it aims to offer insightful information for investors and decision-makers navigating the challenging regional economic environment.

1.2.2. Researching the Impact of Oil and Exchange Rates on the Islamic Stock of Turkiye

Another purpose of this study is to ascertain how oil prices and exchange rates impact the performance of Turkiye's Islamic stock market. Specifically, the study aims to determine how much the performance of Turkiye's Islamic stock market is impacted by the depreciation of the lira exchange rate. Evaluate the significance of the oil price as a predictor of the Islamic stock market's performance in Turkiye. Examine the relationship between the oil price, the lira exchange rate, and the Islamic stock market of Turkiye from 2008 to 2021. Make suggestions on how to effectively manage the effects of oil prices and exchange rates on Turkiye's Islamic stock market for investors and decision-makers.

By achieving these goals, this study hopes to advance knowledge of the variables affecting the performance of the Turkish Islamic stock market. It also aims to provide useful insights for investors and policymakers seeking to navigate the complex economic landscape in the region.

1.2.3. Researching the Impact of Oil and Exchange Rates on the Conventional Stock of Russia

Examining how exchange rates and oil prices affect Russia's traditional stock market's performance is another goal of this study. The study aims to determine how much Russia's traditional stock market's performance is impacted by the depreciation of the lira exchange rate. Evaluate the significance of the oil price as a predictor of Russia's traditional stock market's performance. Examine the relationship between the oil price, the lira exchange rate, and Russia's traditional stock market from 2008 to 2021. Make suggestions on how to effectively manage the effects of oil prices and exchange rates on Russia's traditional stock market for investors and decision-makers.

By achieving these goals, this study hopes to advance knowledge of the variables affecting the performance of the Russian traditional stock market. Additionally, it aims to offer insightful information for investors and decision-makers navigating the nation's complex economic environment.

1.2.4. Researching the Impact of Oil and Exchange Rates on the Islamic Stock of Russia

Investigating the effects of oil prices and exchange rates on the performance of the Islamic stock market in Russia is another goal of this study. The study aims to determine how much the Russian Islamic stock market's performance is impacted by the depreciation of the lira exchange rate. Evaluate the significance of the oil price as a predictor of the Islamic stock market's performance in Russia. Examine the relationship between the oil price, the lira exchange rate, and the Russian Islamic stock market from 2008 to 2021. Make suggestions on how to effectively manage the effects of oil prices and exchange rates on the Russian Islamic stock market for investors and decision-makers.

By achieving these goals, this study hopes to advance our knowledge of the variables that affect the performance of the Islamic stock market in Russia. Additionally, it aims to offer insightful information for investors and decision-makers navigating the nation's complex economic environment.

1.3. Study Focus

1.3.1. Turkiye & Russia

1.3.1.1. Significant Events that Happened in Turkiye After 2008

After 2008, Turkiye experienced a few noteworthy events. Turkiye was one of the nations impacted by the Global Financial Crisis of 2008, and this had a significant effect on its economy. Turkiye, however, recovered fairly quickly as a result of its effective economic policies and reforms. Gezi Park Protests (2013) began as a nonviolent movement of opposition to the redevelopment of Istanbul's Gezi Park grew into a massive anti-government movement. The Syrian Civil War (2011-) has had a significant impact on Turkiye, creating a refugee crisis and security threats along its southern border. To safeguard its interests, Turkiye has both taken in millions of Syrian refugees and intervened militarily in Syria (Aktürk, 2019, p.106). Attempt a Coup in July 2016, a faction of the Turkish military made an attempt to overthrow the government (Sherstyukov & Bodishteanu, 2021, p.90). Thousands of Gulenists, military personnel, judges, and journalists were detained as a result of the government's response to the failed coup attempt. In The Constitutional Referendum in April 2017, Turkiye held a constitutional referendum that narrowly supported President Recep Tayyip Erdogan's proposal to convert the nation from a parliamentary to a presidential system.

Turkiye experienced a currency crisis in 2018, with the lira losing value rapidly against the US dollar. As a result, there was a period of economic unpredictability and volatility, and the government took a number of steps to stabilize the currency. After the initial results of the Istanbul mayoral election (2019) were declared invalid due to alleged irregularities, Turkiye held a second round of voting in June 2019. President Erdogan and his ruling party suffered a significant political setback as a result of the election.

The political, economic, and social landscape of Turkiye has been significantly impacted by these events over the past fifteen years. which will be taken into account during the study's discussion.

1.3.1.2. Significant Events that Happened in Russia After 2008

After 2008, Russia experienced several noteworthy events. Russo-Georgian War in August 2008, Russia and Georgia engaged in a brief conflict over the disputed territories of South Ossetia and Abkhazia. With Russia coming out on top, the situation between Russia and the West deteriorated as a result of the conflict. Crimea's annexation in March 2014, Russian forces seized control of the region that had previously been a part of Ukraine. The action drew widespread criticism from the international community and prompted the West to impose economic sanctions on Russia. Eastern Ukraine conflict (2014–) after Russia annexed Crimea, pro-Russian separatists in eastern Ukraine started an uprising against the Ukrainian government (Sherstyukov & Bodishteanu, 2021, p.90). Elections for President were in 2012 and 2018. Vladimir Putin won reelection as Russian president in both years. Election-related controversies included allegations of electoral fraud and opposition leaders being detained or barred from running. The West has placed sanctions (2014-) on Russia Economic Sanctions retaliation for Russia's annexation of Crimea and involvement in the conflict in Eastern Ukraine (Sherstyukov & Bodishteanu, 2021, p.90). The Russian economy has been significantly impacted by these sanctions, especially in the energy sector. Since 2015, Russia has supported the Syrian government militarily during the civil war in Syria. As a result, relations between Russia and Syria have improved, while tensions with the West have grown. Like many other nations, Russia has experienced serious effects from the COVID-19 pandemic (2020-). Numerous cases and fatalities have been reported in the nation, and some people have criticized the government's response to the pandemic.

Over the past fifteen years, these events have had a significant impact on Russia's political, economic, and social landscape.

1.3.1.3. Geographical Closeness

Despite not sharing a land border directly, Turkiye and Russia do share a sea border because they are both on Black Sea coasts. Around 380 kilometers separate Hopa in Artvin and Adler in Krasnodar Krai, which is the closest point on land between the two nations. The shortest route from Turkiye to Russia is by ferry from Trabzon to Sochi, a distance of about 580 kilometers. However, there is a significant distance between the two nations' capitals. Ankara and Moscow are roughly 1,800 kilometers apart by bird

flight, and 2,850 kilometers separate them geographically by the shortest route taken by car. However, flying between two nations is the quickest option. Istanbul to Moscow is a five-hour flight.

Throughout history, there has been a complex and shifting geopolitical relationship between Russia and Turkiye. The Bosphorus Strait, which connects the Black Sea to the Mediterranean, and the Sea of Marmara's maritime border have historically been particularly contentious areas. Additionally, their respective interests in the Black Sea region, energy supplies, and the Eastern Mediterranean, along with problems in the Caucasus and issues with Russia's Turkic-speaking populations, contributed to some tension between the two nations.

In summary, Turkiye's and Russia's borders have been points of conflict throughout history. The two nations' relationship is still complex and dynamic, despite recent efforts to improve it. There are still points of geopolitical contention and rivalry between the two nations.

1.3.1.4. Historical Relationship

The historical relationship between Turkiye and Russia has been dynamic and complex, shaped by both cooperation and rivalry.

Russia and the Ottoman Empire were frequent rivals during the Ottoman era, with Russia seeking to increase its influence and territory in the area while the Ottoman Empire sought to hold onto its own power and territory (Sherstyukov & Bodishteanu, 2021, p.89). This resulted in a series of conflicts between the two powers known as the Russo-Turkish Wars, which lasted from the 16th to the 20th centuries.

The Republic of Turkiye was founded in 1923 following the fall of the Ottoman Empire after World War I. Turkiye subsequently sought to ally itself with the Western powers and joined NATO in 1952 (Çancı, 2017, p.466). In the meantime, the Soviet Union, which had after the war assumed dominance in the region, sought to increase its influence in the Balkans and the Middle East.

Turkiye and the Soviet Union frequently found themselves on opposing sides of international conflicts during the Cold War, and tensions between the two nations were high. The Soviet Union was a member of the Eastern Bloc, while Turkiye was a member

of the Western Alliance. As a result, there were several crises between the two nations, including the Cuban Missile Crisis, which put the world in danger of nuclear war. It was seen that Türkiye's relations with the Soviet Union was highly affected by Türkiye's relations with the USA (Çancı, 2017, p.467).



Figure 1: Türkiye between Russia and USA -1

Source: Created by the author

However, things started to get better between Türkiye and Russia after the fall of the Soviet Union in 1991. On a number of issues, the two nations have sought to strengthen their cooperation in recent years. Türkiye is moving in the direction of becoming more authoritarian, populist, and nationalist. Which puts Türkiye in a similar spot under Western criticism as Russia, which is categorized as having a semi-authoritarian political system that combines elements of authoritarianism, democracy, and a powerful authoritarian presidency.

Despite their divergent ideologies, Türkiye and Russia have worked to strengthen their ties and expand their cooperation on a variety of fronts, particularly in trade, energy, and tourism. However, the countries' domestic policies and political stances continue to be crucial determinants of how they interact.

1.3.1.5. Political Relationship

The relationship has recently suffered from a few problems. One of the main flashpoints has been the Syrian Civil War (Harunoğlu et al., 2021, p.148), where Türkiye and Russia have backed opposing factions, with Türkiye supporting some rebel groups and Russia supporting the Assad regime. This has caused a lot of tension between the two countries.

In addition, their shared interests in the Eastern Mediterranean, energy resources, the Black Sea region, the Caucasus, and Russia's Turkic-speaking populations all contributed to some tension between the two nations (Çancı, 2017). In spite of these conflicts, Türkiye

and Russia have persisted in dialogue and diplomatic efforts to resolve their disagreements and strengthen their relationship.

Since 2002, Türkiye has been governed by the Justice and Development Party (AKP), a center-right political party with political Islam as its foundation. Recep Tayyip Erdoğan, the current president, who has been in office since 2014, has been branded an authoritarian leader. He has been criticized by the West for his authoritarian governance. Similarly, President Vladimir Putin has been the center of criticism. He has been in power since 2000, first as president and then as prime minister. Russia has been known for having a strong authoritarian president, a powerful security apparatus, and a centralized political system under Putin.

Relations with the USA:

Türkiye and Russia's relations with the United States differ greatly in many ways.

Since the end of World War II, Türkiye has been an important ally of the United States and is a member of NATO. However, Türkiye's proactive policies in the Syrian conflict (Harunoğlu et al., 2021, p.148), Türkiye's purchase of a Russian missile defense system, and differences over the extradition of Fethullah Gulen have all contributed to the two countries' relationship becoming strained in recent years (Sherstyukov & Bodishteanu, 2021, p.91; Aktürk, 2019, p.100). Although they still have a working relationship, these tensions have resulted in political disputes and economic sanctions between the two nations.

On the other hand, geopolitical rivalry between the United States and Russia dates back to the Cold War (Sherstyukov & Bodishteanu, 2021, s91). Tensions between the two nations have been present in recent years over a number of issues, including the annexation of Crimea by Russia, accusations of meddling in the 2016 US presidential election, and divergent views on the Syrian conflict. These tensions have led to economic sanctions and political disagreements between the two countries, with both sides accusing the other of engaging in hostile behavior (Harunoğlu et al., 2021).

Overall, while there have been differences in the nature and degree of tensions between Türkiye and Russia and the United States, these differences reflect the region's complex geopolitical environment as well as the respective interests and strategic goals of the

parties involved. But most of the time, Türkiye's position facing Russia can be explained by Türkiye's relationship with Türkiye's position against the USA (Harunoğlu et al., 2021).



Figure 2: Türkiye between Russia and USA – 2

Source: Created by the author

Relations with Europe:

Türkiye and Russia have had different relationships with Europe throughout history.

Türkiye is a prospective member of the European Union (EU), and the two parties have been in accession negotiations since 1999. Türkiye and the EU have a sizable number of agreements in a variety of fields, including energy, immigration, and counterterrorism.

However, the procedure for accession has been drawn out, slow, and challenging. Türkiye's domestic policies have drawn criticism from the EU, particularly in the areas of human rights, democracy, and the rule of law. Concerns have been raised about the country's course and the decline of democracy under the current administration. The likelihood that Türkiye will ever join the EU has been seriously questioned in light of these problems (Pierini, 2019).

The relationship between Russia and Europe, in contrast, has been more nuanced and characterized by periods of cooperation and rivalry. During the Cold War, the Soviet Union was a member of the Eastern Bloc, and its relations with the West were tense and hostile.

Russia started interacting with the EU after the Soviet Union fell apart in 1991. The Partnership and Cooperation Agreement (PCA) between the EU and Russia establishes the foundation for their relations. In addition, Russia and the EU have a number of agreements covering a range of topics, including trade, energy, and counterterrorism.

However, since Crimea's annexation (2014) and the ongoing Eastern Ukraine conflict, relations between Russia and the EU have grown more tense. As a result of these actions, the EU has imposed economic sanctions on Russia, and tensions between the two parties have risen (Sherr, 2016).

In conclusion, despite having different historical relationships with Europe, both Türkiye and Russia have had intricate and dynamic relationships with the EU and other European nations. While Russia's relationship with the EU has been marked by periods of cooperation and competition, Türkiye's relationship with the EU has largely been centered around its accession process.

Relations with the Caucasus:

Türkiye and Russia have distinct relationships with the Caucasus region. Türkiye shares cultural, historical, and linguistic affinities with several countries in the Caucasus, particularly Azerbaijan. The two nations have enjoyed close ties, cooperating on issues such as the Nagorno-Karabakh conflict (Gabuev, 2020). Türkiye has actively supported Azerbaijan in economic and energy projects, including the Baku-Tbilisi-Ceyhan oil pipeline and the Baku-Tbilisi-Kars railway.

Türkiye's relationship with Armenia, however, has been strained due to the unresolved dispute over the events of 1915. This disagreement has hindered diplomatic relations and resulted in a closed border between the two countries. Despite attempts to normalize relations, such as the signing of protocols in 2009, no significant progress has been made.

Russia, on the other hand, has exerted historical influence and control over the Caucasus region. It maintains military bases in Armenia and supports the separatist regions of Abkhazia and South Ossetia in Georgia. Energy plays a significant role in Russia's engagement with the region, as it supplies natural gas to countries like Armenia, Georgia, and Azerbaijan. Gazprom, a state-owned company, has also been involved in energy projects in the area.

However, Russia's relations with Georgia have been strained due to conflicts and territorial disputes, most notably the 2008 Russo-Georgian War over South Ossetia. These tensions have created challenges in the broader relationship between Russia and Georgia.

In addition, Türkiye had cultural and religious ties with the Chechen population in the Caucasus, providing refuge and support to many Chechen refugees during the conflicts in Chechnya. The Turkish government has maintained a sympathetic stance towards the Chechen cause, advocating for peaceful resolutions and offering humanitarian assistance. This has resulted in the growth of the Chechen diaspora in Türkiye. In contrast, Russia has exerted historical influence and control over the Caucasus region, including Armenia and the separatist regions of Abkhazia and South Ossetia. Russia maintains military bases in Armenia and has employed military force to suppress separatist movements, particularly in Chechnya, where it maintains a strong presence (Çanci, 2017, p.469).

In summary, Türkiye's relations in the Caucasus are characterized by cultural and historical affinities with Azerbaijan, while its ties with Armenia are complicated by the historical dispute. Meanwhile, Russia has historical and political influence in the region. Its relationships with certain countries, such as Georgia, have been marked by conflicts and territorial disputes (Ramani, 2022).

Relations with the Middle East:

Russia and Türkiye have a different historical relationship with the Middle East.

Türkiye has long had close ties with many Middle Eastern nations. Türkiye's ties with the Middle East are part of its own history. Türkiye was an empire—the Ottoman Empire—just one century ago. The empire's borders stretched from the Caspian Sea all across north Africa and eastern Europe. This heritage gives Türkiye a sense of belonging in the region. As a result of this, Türkiye actively participated in the political and economic development of the area. Additionally, it has helped to mediate disputes between various regional nations and factions. Additionally, Türkiye and the Middle East have historical and cultural ties, and Turkish culture has significantly influenced local culture.

Türkiye's connection to the Middle East, however, has grown more nuanced in recent years. The Syrian Civil War has been one of the major flashpoints, and Türkiye has been supporting some rebel groups that are opposing the Assad regime, which is backed by Russia. Turkish relations with other nations in the region have become very tense as a

result, particularly with Iran and Iraq, both of which are supporting the Assad regime (W.F., 2023).

Additionally, tensions have arisen between Türkiye and many of its neighbors, particularly Greece, Cyprus, and Israel, as a result of Türkiye's increasingly assertive foreign policy and its attempts to gain influence in the Eastern Mediterranean (W.F., 2023).

In contrast, compared to other major world powers, Russia has historically had a smaller presence in the Middle East. During the Cold War, the Soviet Union did have a small amount of influence in the region, but it was mainly restricted to Soviet allies like Syria and Egypt (Marom, 2023).

However, Russia's involvement in the area has increased recently. One of the main causes of this is the Syrian Civil War, in which Russia has been aiding the Assad regime with military advisers, weapons, and intelligence. Due to this, Russia has emerged as a crucial player in the conflict in Syria and the wider region. Additionally, Russian President Vladimir Putin has met with a number of Middle Eastern leaders to discuss security and economic issues in an effort to strengthen Russia's role and influence there (Marom, 2023).

In conclusion, Türkiye and Russia have historically had different relationships with the Middle East, but both nations have recently increased their involvement in the region. In contrast to Russia, which has a smaller historical footprint in the Middle East, Türkiye has historically had closer ties with the region. Nevertheless, both nations have been more involved in the Middle East recently, especially in light of the Syrian Civil War.

Relations with the Balkans:

Türkiye and Russia have had different relationships with the Balkans throughout history. As a result of the mentioned Ottoman Empire heritage, strong historical ties have existed between Türkiye and the Balkan nations, particularly with Bosnia and Herzegovina and Bulgaria. Türkiye has actively contributed to the political and economic growth of the area and has served as a mediator between various nations and factions in the area. Additionally, Türkiye has advocated for the EU's inclusion of the Western Balkans.

Turkiye's connection to the Balkans has grown more complicated recently. Tensions have arisen with some of the nations in the region, particularly Greece and Cyprus, as a result of Turkiye's increasingly assertive foreign policy, particularly in the Eastern Mediterranean. Additionally, Turkiye has been questioned for interfering with the domestic affairs of some Balkan nations, which is reasonable as Turkiye shares a long history with the nations.

On the other hand, Russia hasn't had a big presence in the Balkans historically. During the Cold War, the Soviet Union had some influence in the region, but it was mainly restricted to Soviet-aligned nations like Yugoslavia.

But Russia's involvement in the region has increased recently. Russia has been actively interacting with the Western Balkan nations, especially in the trade and energy sectors. The Russian government has been working to improve relations with the nations in the Balkans and to expand its role and influence there. Additionally, some nations in the region have established cordial ties with Russia; Serbia is one example where this has been the case historically. However, these ties are often complicated and dependent on both domestic and global political circumstances.

It's important to note that although Russia and Turkiye have approached the Balkan nations in different ways, both have sought to expand their influence and forge closer ties with the nations in the region (Liebig, 2021).

Relations with Asia:

Russia and Turkiye have a different historical relationship with Asia.

Turkiye has long maintained close ties with the nations of Central Asia, especially with those that share its Turkic language, like Kazakhstan, Kyrgyzstan, and Turkmenistan. Turkiye has actively participated in the region's political and economic development and has served as a mediator between various Central Asian nations and factions. Additionally, Turkiye has actively promoted cooperation between the nations of the region and has been a strong proponent of regional integration in Central Asia (Çanci, 2017, p.467).

Turkiye has been attempting to expand its role and influence in Southeast Asia recently, particularly in the trade and investment sectors. Turkiye has been actively interacting with

nations like Indonesia, Malaysia, and Thailand in an effort to forge stronger ties with them. Additionally, Türkiye has participated in regional forums like the G-20 in an effort to raise its profile and visibility in the area.

However, Russia has long had a significant presence in Asia, especially in the Far East. Russia has long-standing business and cultural ties with nations like China and Japan, and it participates actively in regional organizations like the Shanghai Cooperation Organization (SCO) and the Asia-Pacific Economic Cooperation (APEC).

In terms of security and diplomacy, Russia has also played a significant role in the region, particularly in the areas of counterterrorism and non-proliferation. In addition, Russia has been making a concerted effort to improve its energy ties with the neighboring nations, particularly through the building of pipelines and the export of natural gas.

In conclusion, Türkiye and Russia have historically had different connections to Asia, with Türkiye typically having stronger ties with Central Asia and Russia having a stronger presence in the Far East. However, both nations have been actively attempting to increase their role and influence in the region in recent years, with Russia continuing to play a significant role in the region's security and energy while Türkiye has focused on Southeast Asia.

1.3.1.6. Economic Relationship

Economic and trade relations constitute the driving force behind Turkish-Russian relations. Russia has been one of Türkiye's principal trading partners, with a long history of mutually beneficial economic cooperation. The trade volume between the two countries reached 26,309 billion USD in 2019, with Türkiye exporting goods worth 3,854 billion USD and importing goods worth 22,454 billion USD (M.F.A.T., 2020).

Energy plays a crucial role in their economic partnership, and both nations have been actively collaborating on various energy projects. The Turk Stream Natural Gas Pipeline, inaugurated on January 8, 2020, has further strengthened their cooperation in the field of energy. Russia, being one of Türkiye's leading energy suppliers, has played a significant role in this regard. The two countries have also signed agreements to develop joint nuclear, gas, and oil energy projects (M.F.A.T., 2020).

Tourism is another important area of economic cooperation between Türkiye and Russia. Russia serves as one of the primary sources of tourists for Türkiye, and the two nations have been working together to enhance travel opportunities and promote tourism between them.

Trade and investment have been key focuses of their economic cooperation as well. Russia has been one of the major sources of foreign investment in Türkiye, and the two countries have been actively seeking to increase trade and investment in industries such as transportation, construction, and technology. Efforts have been made to improve Türkiye's trade balance with Russia and strengthen bilateral trade.

Despite their economic cooperation, the relationship between Türkiye and Russia has faced challenges due to international sanctions, restrictions, and political tensions. However, both nations have been working diligently to address these difficulties and further solidify their economic ties.

Their Relationship with Oil:

The main reason we are picking these two countries is their relationship with oil.

Türkiye and Russia have a strong relationship in the energy and oil sectors.

Russia is one of Türkiye's main suppliers of natural gas and oil. Numerous energy agreements between the two nations are in force, and they have been collaborating to create new energy projects. For instance, the two nations have been collaborating on plans to expand the Blue Stream pipeline, which passes beneath the Black Sea and provides Türkiye with natural gas. In addition, Russia has provided Türkiye with crude oil, and the two nations have collaborated on oil exploration projects in the Black Sea.

Russia has contributed significantly to Türkiye's oil supply. Rosneft, the state-owned oil company of Russia, has been supplying Türkiye with crude oil and oil-related products and has been actively involved in the Turkish market. The construction of an oil pipeline from Russia to Türkiye, which would enable greater oil exports to Türkiye, has also been agreed upon by the two countries.

Both nations have been working together on nuclear energy initiatives in addition to oil and gas projects. The construction of Türkiye's first nuclear power plant, Akkuyu Nuclear

Power Plant, has begun. Rosatom, Russia's state-owned nuclear energy corporation, is the project's principal contractor and investor.

However, in recent years, political tensions between the two nations as well as international sanctions and restrictions have complicated the energy and oil relationship between Russia and Turkiye. Despite the challenges, both countries have been working to manage them and to continue to strengthen their energy and oil relationships.

Overall, Turkiye and Russia have a strong energy and oil relationship, with Russia being one of Turkiye's main suppliers of natural gas and oil, and the two countries have been working together to develop new energy projects and to increase energy trade.

Two Countries Facing Exchange Rate Depreciation:

One of the other reasons we have selected these two countries is that both Turkiye and Russia have faced exchange rate depreciation problems in recent years.

In recent years, the Turkish lira has significantly declined in value against important currencies like the US dollar and the euro. Many things have contributed to this depreciation, including high inflation, a significant current account deficit, and a lack of faith in the economy. The cost of living has gone up for Turkish citizens as a result of the lira's depreciation, which has increased the price of imports. It also made it more difficult for Turkish businesses to repay their debt in dollars, which raised the default risk.

In recent years, the value of the Russian ruble relative to other major currencies has significantly declined. Several factors, including declining oil prices, Western economic sanctions, and a lack of confidence in the economy, have contributed to this depreciation. The cost of living has increased for Russians as a result of the depreciation of the ruble, which has increased the price of imports. It also made it more difficult for Russian businesses to repay their debt in dollars, which raised the default risk.

In an effort to stabilize their currencies, both governments have implemented capital controls, raised interest rates, and requested financial support from international organizations. However, the solutions haven't always worked, and both nations are still dealing with the depreciation issue.

In general, both Turkiye and Russia have experienced exchange rate depreciation issues in recent years, which has increased the cost of living and made it more difficult for businesses to pay off their debt in dollars.

The main distinction between Turkiye and Russia's exchange rate depreciation issue is the specific reasons and underlying economic circumstances that have contributed to the depreciation of their respective currencies.

In Turkiye, a high current account deficit, low economic confidence, and high inflation have all contributed to the lira's depreciation. Multiple factors, such as lax monetary policy and structural problems with the economy, like a lack of competition in some industries, have contributed to the high inflation rate. A number of factors, including high energy prices and a lack of competition in some economic sectors, have contributed to the large current account deficit, which reflects the nation's propensity to import more than it exports. Concerns about the nation's political, economic, and debt-repayment capacity have contributed to a lack of confidence in the economy.

Falling oil prices, Western economic sanctions, and a lack of faith in the economy are the main contributors to the depreciation of the ruble in Russia. Given that a sizable portion of Russia's total exports are made up of oil and gas, the drop in oil prices has had a significant effect on the country's economy. The economy has also been significantly impacted by the economic sanctions the West, particularly the US and EU, imposed as a result of Russia's actions in Ukraine. These sanctions have made it more difficult for Russian businesses to access international capital markets and have decreased foreign investment. Concerns about the nation's political, economic, and debt-repayment capacity have contributed to a lack of confidence in the economy.

Even though both Turkiye and Russia have experienced exchange rate depreciation issues, their respective currencies have declined for various reasons, each with its own unique set of underlying economic factors.

Their Stock Market and Islamic Stocks:

The fact that both nations have stock exchanges and have businesses listed there that are associated with the Islamic finance sector is another reason why we have chosen these two nations.

The stock exchange in Turkiye is called Borsa Istanbul, and it features a number of organizations and funds associated with Islamic finance. Examples of Islamic businesses that are listed on the stock exchange include Islamic banks like Albaraka Turk and Islamic insurance firms like Türkiye Finance Participation Bank. Exchange-traded funds (ETFs) are another option; for instance, the Istanbul Stock Exchange Islamic Finance ETF invests in businesses that adhere to Islamic financial principles.

The Moscow Exchange is the main stock exchange in Russia. It also hosts some funds and companies related to Islamic finance, though there are fewer of them than in Turkiye. There are few Islamic banks or insurance companies that are listed on the stock exchange, and the Islamic finance sector is still underdeveloped in Russia. But there are some investment funds, like Alfa-Capital Islamic Finance Fund, that adhere to Islamic financial principles and are listed on the stock exchange.

It's crucial to keep in mind that Russia's Islamic finance sector is still underdeveloped and small in comparison to Turkiye, with a relatively small number of firms and funds involved. Though the sector is expanding, it's anticipated that more Islamic finance-related businesses and funds will list on the stock exchange in the future.

1.3.2. Oil

Due to its significance as a source of energy, potential for generating income, effect on economic growth, and impact on inflation, oil plays a significant role in modern economies.

Production of Energy: Oil is one of the most significant energy sources for the world economy. It is employed in a wide range of sectors, including manufacturing, transportation, and power generation. As a result, the cost of goods and services as well as the state of the global economy as a whole are greatly influenced by the price and availability of oil. High oil prices can make it more expensive for businesses to produce goods, which raises consumer prices and slows down economic activity.

Revenue Generation: Countries with large oil reserves may rely heavily on oil exports as a source of income. For instance, nations like Saudi Arabia, Russia, and the US have sizable oil reserves and are significant oil exporters. These exports' earnings can be used to pay for government initiatives like infrastructure development and other programs. For

developing nations, where oil exports can give their economies a much-needed boost of cash, this revenue can be particularly significant.

Economic Growth: The oil industry can be a significant contributor to economic growth in nations with significant oil reserves. This is due to the industry's ability to generate employment and boost economic activity in related sectors like manufacturing and transportation. Additionally, the money earned from oil exports can be used to fund economic development projects like building infrastructure.

Inflation: Since the price of oil can have a big impact on inflation, economists pay close attention to it. Inflation may rise as a result of rising prices for goods and services as a result of rising oil prices. This is because many companies rely heavily on oil as a component of their production processes, increasing the cost of doing business, which they may then pass along to customers.

In conclusion, oil is an essential resource in modern economies because of its significance as an energy source, its potential for generating income, its effect on economic growth, and its impact on inflation. Oil is a key component of the world economy, so any disruptions in the oil supply could have a big impact on business activity.

1.3.2.1. 2008 Global Financial Crisis Effect

The combination of elements related to the global financial crisis and the supply and demand dynamics of the oil market played a significant role in the decline of the oil price in 2008–2009. As a result of the financial crisis, there was a global economic slowdown at the time, which decreased consumer and business demand for oil. The price of oil was influenced downward by this. Additionally, several nations, including the United States, Canada, and Brazil, saw a marked increase in oil production. Due to the combination of the increased oil supply and decreased demand, oil inventories grew and prices continued to fall. Additionally, investors bought and sold oil futures contracts on the oil market due to speculation, which increased price volatility. All of these elements played a part in the sharp drop in oil prices from their 2008 peak of over \$140 per barrel to their 2009 low of about \$30 per barrel.

It is important to note that the drop in oil prices did not only occur during the financial crisis. Due to a sluggish global economic recovery and increased shale oil production in

the United States, which helped to increase the world's oil supply, prices remained low in the years that followed.

1.3.2.2. 2014 Global Oversupply

The decline in oil prices in 2014 and 2015 was primarily brought on by a number of factors connected to the dynamics of supply and demand in the oil market. Due to increased production in a number of nations, including the United States, which had seen a boom in shale oil production, there was a global oversupply of oil at the time. Due to a slowdown in global economic growth, particularly in emerging markets, oil demand was also declining at the time. Due to this, oil prices started to fall precipitously in mid-2014, dropping from about \$100 per barrel to under \$30 per barrel by early 2016. Several geopolitical factors also played a role in the drop in oil prices. One of the most notable was Saudi Arabia's decision to maintain its high levels of production, the world's largest oil producer, in order to keep its market share and exert pressure on other producers, particularly American shale producers.

In addition, as buyers using other currencies were forced to pay more for oil, the strengthening of the U.S. dollar, the currency used to price oil, also played a role in the decline in oil prices.

These factors collectively caused the sharp decline in oil prices that occurred in 2014 and 2015, which had a significant impact on both the oil industry and the world economy.

1.3.2.3. COVID - 19 Effect

The COVID-19 pandemic and the actions of the major oil-producing nations were the main causes of the decline in oil prices in 2020. The COVID-19 pandemic caused a sharp drop in oil demand as fewer people traveled and businesses scaled back their operations. Because producers kept pumping oil even as demand decreased, there was an excess of oil on the market as a result. As a result, oil prices started to fall precipitously in March 2020 and eventually reached their lowest points in more than a decade. In an effort to gain market share, major oil-producing nations like Saudi Arabia and Russia increased production and flooded the market with cheap oil at the same time. As a result, the supply of oil increased and the price of oil was further pressed downward.

Oil prices experienced a historic decline as a result of the interaction of these factors, dropping from about \$60 per barrel in early 2020 to under \$20 per barrel in April 2020. Even though prices have since slightly increased, they are still substantially below pre-pandemic levels.

1.3.3. Exchange Rate

Exchange rates describe how much one currency is worth in relation to another. They have a significant impact on a variety of economic factors, such as trade, investment, inflation, and economic growth. Trade: The value of a country's trade balance, which is the difference between its exports and imports, is significantly influenced by exchange rates. A nation's exports lose market share and become more expensive when their currency appreciates in relation to the currency of another nation. This may result in less demand for those exports, which could have an effect on a nation's trade balance. A country's currency depreciates, its exports become cheaper and more competitive, which can boost demand for those exports and improve the country's trade balance.

Investment: The flow of capital between nations is also influenced by exchange rates. Foreign investors may find investing in a country more expensive when its currency appreciates because they will have to convert their money into the local currency. This might result in fewer investment flows, which might have an effect on economic expansion. On the other hand, when a nation's currency weakens, foreign investors may find it more cost-effective and alluring to make investments there.

Inflation: Exchange rates have an impact on the cost of imported goods and services, which in turn has an impact on inflation. A country's prices for goods and services may rise as a result of higher import costs when its currency depreciates. On the other hand, when a nation's currency strengthens, it can make imports less expensive, which can bring down the cost of goods and services. This may have an effect on an economy's overall level of inflation.

Economic Growth: Last but not least, exchange rates can have an effect on economic growth. When a country's currency appreciates, its exports become more expensive and less competitive, which can reduce demand for those exports and impact economic growth. On the other hand, when a nation's currency depreciates, its exports become more

affordable and competitive, which can increase export demand and enhance economic growth.

In conclusion, exchange rates are a key idea in economics because they have an effect on a wide range of economic variables, such as trade, investment, inflation, and economic growth. Therefore, in order to make wise decisions, policymakers, companies, and people involved in international trade or investment need to understand exchange rates.

1.3.3.1. Lira

The Turkish Lira is issued by the Central Bank of the Republic of Turkiye, which also has control over the banking system and sets monetary policy. The foreign exchange market, which is influenced by a number of variables including economic conditions, political stability, and general market trends, determines the exchange rate of the Turkish lira. The Turkish lira has experienced high inflation in the past, which has caused a gradual depreciation of the currency. Turkiye's central bank and government have taken steps to try and control the country's persistent inflation problem. The Turkish lira is mainly used within Turkiye and is not well-liked abroad. However, it is convertible into other currencies at banks and foreign exchange offices in Turkiye and elsewhere.

These are just a few of the Turkish lira's distinguishing characteristics. The value of the Turkish lira is prone to swings, like that of any other currency, depending on a variety of variables, including shifts in domestic and international political and economic conditions.

2018-2019 Fall:

In 2018 and 2019, the Turkish Lira's exchange rate depreciated significantly as a result of a number of factors, including economic imbalances, political unpredictability, and tensions with the United States.

One of the main reasons for the currency depreciation was Turkiye's sizable current account deficit, or balance of payments with other nations. Turkiye's currency was under pressure because it was importing more goods and services than it was exporting. There were also worries about how the government was handling economic policy as well as apprehensions about political instability.

Another factor was the escalating hostilities between Turkiye and the US, which prompted the US government to impose economic sanctions on Turkiye. Due to Turkiye's detention of an American pastor and its acquisition of a Russian missile defense system, which raised questions about Turkiye's adherence to US interests, sanctions were imposed.

Due to the interaction of these elements, the Turkish lira's value declined sharply as a result of a loss of confidence in the currency. In 2018 and 2019, the Turkish lira lost more than 40% of its value against the US dollar, which caused inflation and severe financial hardship for many people.

In order to try to stabilize the currency, the Turkish government implemented a number of measures, including raising interest rates, increasing government spending, and enacting structural economic reforms. These actions had a limited effect, though, and the lira was still under pressure for some time.

2021 Fall:

Since the beginning of 2021, the value of the Turkish lira has decreased in relation to most of the major world currencies. Through mid-December 2021, the exchange rate remained in freefall before beginning to recover after the government announced emergency measures to support currency confidence. The Turkish central bank cut interest rates by a full percentage point on November 18, 2021, the third cut since September, and indicated it would keep loosening monetary policy, which led to the recent problems with the lira. (Sabga, 2021)

1.3.3.2. Ruble

The Central Bank of Russia, which oversees establishing monetary policy and policing the banking system, oversees issuing the Russian Ruble. The foreign exchange market, which is influenced by a number of variables including economic conditions, political stability, and general market trends, establishes the exchange rate for the Russian Ruble. The Russian Ruble has experienced inflation over time, just like many other currencies have. The Russian government and central bank have been attempting to reduce inflation through monetary policy and other means in recent years. The Russian Ruble is primarily

used within Russia and is not well-liked abroad. However, it is convertible into other currencies at banks and foreign exchange offices in Russia and other countries.

These are just a few of the Russian Ruble's distinguishing characteristics. The value of the Ruble is prone to swings, like that of any other currency, depending on a variety of variables, including shifts in domestic and international political and economic conditions.

2015 Fall:

In the beginning of 2015, the Russian Ruble's exchange rate declined because of a few factors. First, Russia is one of the world's major oil producers, and the country's economy was severely impacted by the drop in oil prices starting in mid-2014. The country's balance of payments deteriorated, which put pressure on the ruble by causing a sharp decline in export revenues.

Economic sanctions: In response to Russia's annexation of Crimea and involvement in the conflict in Ukraine, Western nations imposed economic sanctions on the nation in 2014. These sanctions limited Russia's access to global markets and raised the cost of borrowing, which made the economy look bad and made the Ruble even less strong.

Due to the financial restrictions and the deteriorating economic climate, many investors and companies withdrew their funds from Russia, causing a sizable capital outflow. This increased the pressure on the ruble and caused a decline in its value.

The Central Bank of Russia received criticism for how it handled the Ruble crisis; some saw it as ineffective or even counterproductive for it to intervene in the foreign exchange market and raise interest rates.

The Russian Ruble depreciated in early 2015 as a result of a number of factors, including declining oil prices, economic sanctions, uncertainty over the Central Bank's policy response, and capital flight.

COVID-19:

The COVID-19 pandemic's effects on the world economy were a major factor in the depreciation of the Russian Ruble's exchange rate at the beginning of 2020. This was a significant contributor to the depreciation of the ruble. A global economic slowdown

brought on by the COVID-19 pandemic in early 2020 decreased demand for oil and lowered prices. As a major oil exporter, Russia's economy and the value of the Ruble were significantly impacted.

In order to contain the COVID-19 pandemic, many nations implemented lockdowns and other restrictions, which greatly impacted global economic conditions. The economy and trade around the world were negatively impacted, which further weakened the ruble.

In early 2020, similar to previous instances of Ruble depreciation, there was a sizable outflow of capital from Russia. Businesses and investors withdrew their money from the country, which increased pressure on the ruble. They were concerned about the pandemic's economic effects and the possibility of additional sanctions.

At the beginning of 2020, Russia experienced political unrest as a result of proposed amendments to the country's constitution that would have extended President Putin's tenure beyond the current limit. Investors' worries increased as a result, which further weakened the Ruble.

Overall, the depreciation of the Russian Ruble in the early 2020s was a result of a combination of declining oil prices, economic uncertainty, capital flight, and political instability.

1.3.4. Stock Market & Islamic Stocks

It is impossible to overstate the significance of the stock market to a nation's economy. The stock market is an essential part of any nation's financial system.

The stock market provides an avenue for companies to raise capital by issuing shares of stock to investors. This is an important source of funding for companies looking to expand their businesses, invest in new projects, or create new jobs. The stock market is essential for promoting economic growth because it makes it easier for capital to be formed.

By directing money to businesses that are anticipated to offer investors the highest returns, the stock market aids in resource allocation that is effective. This is achieved through the mechanism of price discovery on the stock market, which reflects expectations held by investors regarding a company's potential in the future. The stock market aids in fostering innovation and competition, which can result in higher

productivity and economic growth, by allocating capital to businesses with the highest anticipated returns.

Based on the expectations of investors, the stock market offers a mechanism for calculating the fair value of stocks. As a result, market bubbles and crashes are less likely to occur because stocks are traded at their true value. A number of variables, such as company performance, the state of the economy, and investor sentiment, all play a role in how prices are determined. The stock market helps to ensure that capital is allocated effectively and that investors are able to make wise investment decisions by offering a platform for price discovery.

For investors who purchase stocks that appreciate in value over time, the stock market offers the possibility of wealth creation. This might boost consumer confidence and spending, which might support economic expansion. Making money can also give investors the means to put money into other sectors of the economy, like real estate or small businesses, which can further the growth of the economy.

Investors can buy and sell shares of stock on the stock market, which offers a liquid market. This makes it simpler for investors to turn their holdings into cash, which may boost market confidence and encourage investment. Because it enables investors to swiftly modify their portfolios in response to shifting market conditions, liquidity also contributes to the efficiency of the stock market.

Finally, it should be noted that the stock market is a crucial part of a nation's economy and that its significance for both economic growth and development cannot be overstated.

1.3.4.1. MSCI TR

An index called MSCI Turkiye measures the performance of the Turkish stock market. An important supplier of tools and services for investment decision support, MSCI Inc., maintains the index.

The large and mid-cap segments of the Turkish equity market's performance is tracked by the MSCI Turkiye Index. Companies with their headquarters in Turkiye or whose primary source of income is from it are included in the index. The index is made up of a variety of industries, such as consumer staples, industrials, and materials.

The index is weighted according to free float market capitalization, which means that organizations with larger market capitalizations and a higher percentage of their shares on the open market are assigned a greater weight in the index. Financials (33.2%), industrials (18.1%), and consumer discretionary (12.7%) made up the bulk of the MSCI Turkiye Index as of May 2023.

Investors frequently use the MSCI Turkiye Index as a benchmark for the Turkish equity market because it gives them exposure to the economy of the nation and its sizable and expanding consumer base. But it's important to remember that buying individual stocks or investing in indices always entails risk, so investors should carefully consider their investment goals and risk tolerance before making a purchase.

1.3.4.2. MSCI TR Islamic

An equity index that gauges the performance of Turkiye-based companies adhering to Shariah is called the MSCI Turkiye Islamic Index. It is intended for investors who are looking to put money into businesses that adhere to Islamic principles and regulations.

The index is maintained by MSCI Inc., a top supplier of tools and services for investment decision support. Large and mid-cap firms that adhere to Islamic investment standards are included in the MSCI Turkiye Islamic Index. Companies that fall under these criteria are not allowed to operate in sectors like those related to alcohol, gambling, or tobacco, or those that engage in interest-based transactions, high debt loads, or other non-Shariah compliant activities.

Free float market capitalization is how the MSCI Turkiye Islamic Index is weighted, which means that organizations with larger market capitalizations and more of their shares on the open market are given a higher weight in the index. The financial sector, consumer staples (18.6%), and materials (9.8%) were the MSCI Turkiye Islamic Index's three largest sub sectors as of May 2023.

The Turkish market can be accessed while upholding Islamic principles by investing in Shariah-compliant stocks or indices like the MSCI Turkiye Islamic Index. But it's important to remember that buying individual stocks or investing in indices always entails risk, so investors should carefully consider their investment goals and risk tolerance before making a purchase.

1.3.4.3. MSCI RS

An equity index that monitors the performance of the Russian stock market is called MSCI Russia. Its purpose is to assess how well the Russian equity market's large and mid-cap segments are performing.

The index is maintained by MSCI Inc., a top supplier of tools and services for investment decision support. Companies that are headquartered in Russia or get the majority of their revenue from it are included in the MSCI Russia Index. The index is made up of a variety of industries, such as consumer staples, energy, and financials.

Free float market capitalization is how the MSCI Russia Index is weighted, which means that businesses with a larger market capitalization and a higher percentage of their shares that are traded are given a greater weight in the index. The largest MSCI Russia Index sectors as of May 2023 were energy (50.2%), materials (13.3%), and financials (11.2%).

Investors frequently use the MSCI Russia Index as a benchmark for the Russian equity market because it gives them exposure to both the Russian economy and its industries dependent on natural resources. It is crucial to remember that investing in individual stocks or indices is always risky, so investors should think carefully about their investment goals and risk tolerance before making a purchase.

1.3.4.4. BMI

The S&P Russia BMI Shariah equity index tracks the performance of Russian businesses that adhere to Islamic principles and regulations. It is intended for investors that abide to Islamic Law.

S&P Dow Jones Indices, a top provider of financial market indices, maintains the index. Companies with their headquarters in Russia or whose main source of income comes from it are included in the S&P Russia BMI Shariah Index. The sectors that make up the index are diverse and include consumer staples, energy, materials, and financials.

As a result of the index's float-adjusted market capitalization weighting system, companies with larger market capitalizations and a higher percentage of their shares on the open market are given a higher weight in the index. The S&P Russia BMI Shariah

Index's three largest sectors as of May 2023 were financials (12.4%), materials (14.2%), and energy (48.2%).

By sticking to Islamic principles, exposure to the Russian market can be obtained by investing in indices or stocks that comply with Shariah, such as the S&P Russia BMI Shariah Index. But it's important to remember that buying individual stocks or investing in indices always entails risk, so investors should carefully consider their investment goals and risk tolerance before making a purchase.

SECTION 2: LITERATURE REVIEW

2.1. Theoretical Literature

2.1.1. Theoretical association between Oil and the Exchange Rate

The relationship between oil prices and exchange rates is complex and is influenced by a variety of factors. Higher oil prices can raise costs for oil-dependent industries, reducing profitability and economic growth and potentially leading to currency depreciation. Lower oil prices, on the other hand, can reduce costs for such industries, boosting economic growth and potentially causing currency appreciation. Oil prices can also have an impact on a country's trade balance, with higher prices worsening the balance for oil-importing countries and potentially leading to currency depreciation. Lower oil prices can help the trade balance, which can lead to currency appreciation. Another important factor is risk perception, as higher oil prices can increase market volatility and risk perception, potentially appreciating safe-haven currencies, while lower oil prices can reduce perceived risks and lead to safe-haven currency depreciation. Additional factors such as monetary policy, interest rates, and global economic conditions, as well as the specific circumstances of individual countries, must be considered because they can influence the relationship between oil prices and exchange rates.

The two distinct theoretical transmission channels between exchange rates and oil prices—wealth transfer channels and terms of trade channels—are widely mentioned in the literature. Regarding the first channel, early work by Golub (1983) and Krugman (1983) asserts that oil prices have an impact on exchange rates through redistributing wealth between oil exporting and importing nations. For instance, a spike in oil prices results in a wealth transfer from oil exporters to importers, which depreciates (appreciates) the currency rates of oil exporters and importers, respectively, due to current account imbalances. These Golub (1983) model projections, however, are predicated on the idea that oil importers' demand is inelastic to price changes. The theoretical models developed by Krugman (1983) also demonstrate that, depending on the assumptions made regarding trade balances, trade elasticities, capital flows, and speculation, the impact of rising oil prices on exchange rates varies. For instance, Krugman (1983) demonstrates in a model incorporating speculation that when oil prices rise, currency rates can fluctuate

in the near term between rising and falling. Rising oil prices increase the profits of oil exporters, and if these petrodollars are converted back into dollars, the short-term demand for dollars increases. Alternately, the long-term expectation is that oil importers' currencies will weaken as a result of the negative terms of trade effect, and even if petrodollars are recycled, this expectation of future depreciation is sufficient to cause the dollar to decrease in the near term.

Oil price shock's influence on real exchange rates through trade terms is examined by the second transmission channel (Y. Chen & Rogoff, 2003; van Amano & Norden, 1998). For instance, Chen & Chen (2007) created a theoretical model with two sectors for tradeable and non-tradeable items in both the country of origin and other nations. They use the model to construct a single equation connecting the real exchange rate to the real price of oil, suggesting that the degree to which a nation depends on imported oil affects its real exchange rate significantly. Because of this, if the home country is more dependent on oil imports, an increase in real oil prices may cause a bigger proportional increase in the price of tradeable commodities in the home country than in the foreign country, leading to a real devaluation of the home currency (Chen & Chen, 2007). Numerous empirical studies have examined the predicted information content of oil prices for exchange rates using different approaches and for various time periods as a result of these theoretical concerns (Beckmann et al., 2020). Depending on the technique employed, the sample period, and whether the nation is a net exporter or importer of oil, the conclusions of these research vary greatly. These studies can be classified into two groups based on their technique. The inferences made by the first group are based exclusively on the findings of the in-sample Granger-causality test. Granger causality, which links oil prices to currency rates, for instance, raises the possibility that oil prices can forecast exchange rates but does not offer a definite solution. The second group goes one step further by using out-of-sample forecasts to validate the in-sample test results.

2.1.2. How Oil Impacts the Stock Market in Theory

The stock market is heavily influenced by oil prices. Oil price fluctuations have a direct impact on energy sector stocks. When oil prices rise, energy companies see higher profits and stock prices, while falling oil prices can result in lower profits and stock prices. Oil prices also have an impact on inflation and consumer spending. Rising oil prices can

contribute to higher inflation, causing stock prices to fall as consumer spending falls. Lower oil prices, on the other hand, can stimulate consumer spending and potentially lead to higher stock prices. Furthermore, oil prices have an impact on international markets, causing economic insecurity in oil-dependent countries and potentially affecting stock prices. Overall, oil prices have a significant impact on stock market performance.

Theoretical perspectives on the relationship between oil prices and stock returns have been the subject of extensive academic investigation. Jones and Kaul (1996) provide a theoretical justification, whereby the majority of the literature has focused on testing the cash flow hypothesis derived from the works of Williams (1938) and Fisher (1930). According to the cash flow hypothesis, the relationship between oil prices and stock returns can be either negative or positive. The negative relationship can be explained through two channels. Firstly, since oil is a significant input for many businesses, higher oil prices elevate production costs, resulting in reduced future cash flows, earnings, dividends, and subsequently, stock returns. Second, higher oil prices could lead to overestimation of inflation expectations and higher nominal interest rates. As interest rates are employed to discount anticipated future cash flows, they diminish earnings, dividends, and, consequently, stock returns. The direction of this relationship can be determined through a third channel, such as the impact of oil price volatility on the sensitivity to oil price volatility, and the impact on discount rates and cash flow risk premium components. The sensitivity to oil prices can have either a positive or negative impact, contingent upon the risk premium's sign, which can vary significantly across firms and over time.

An alternative explanation for the positive correlation between oil prices and stock returns is the perception of investors associating rising oil prices with a thriving economy (Kollias et al., 2013). Consequently, higher oil prices may reflect improved business performance, thereby positively impacting stock markets. Hamilton (2009) asserts that the increase in oil prices before the Global Financial Crisis (GFC) reflected growth in developing markets and high levels of business confidence. Chen et al. (2017) argue that stock market momentum and oil price volatility exhibit a positive correlation. Using China as an example, the association is driven by long-term volatility in investor sentiment, with investors reacting to volatility in oil yields due to uncertainty with increased demand for earnings stocks. thinking.

According to the type of shock, stock returns can either respond positively or negatively to changes in oil prices, as shown by Kilian and Park (2009). Stocks and oil prices are inversely related as a result of demand shocks brought on by apprehensions about potential future oil supply shortages. Meanwhile, there is a positive correlation between stocks and oil prices when there is a rise in oil prices brought on by an unexpected global boom. They contend that there is a positive link between oil prices and stock returns during the start of the business cycle because there is strong demand for industrial commodities, which raises both oil prices and stock returns. Over time, it is anticipated that the correlation between oil prices and stock prices would worsen. By using a two-stage Markov-switching methodology, Zhu et al. (2017) demonstrate how the relative significance of supply and demand shocks differs between regimes of low and high volatility. On the other hand, Ciner (2013) contends that the positive link may not always hold true because rising oil prices are not always associated with falling stock returns. It is possible to experience protracted periods of rising oil and stock markets at the same time.

In conclusion, scholarly investigations have explored the theoretical underpinnings of the relationship between stocks and oil prices. The literature has examined various factors, such as the cash flow hypothesis, investor perception, and the nature of oil price shocks, to elucidate the complex dynamics between oil prices and stock returns. Understanding these dynamics is vital for comprehending the intricate interplay between oil markets and the stock market.

2.1.3. How Exchange Rates Impact the Stock Market in Theory

Exchange rates impact the stocks through a variety of channels. Exchange rate fluctuations can have an impact on international trade by altering the competitiveness of exports and imports. Furthermore, interest rates are influenced by exchange rates, with rising currencies potentially leading to lower rates and stimulating the stock market. Currency appreciation can reduce returns for foreign investors and reduce investment, whereas currency depreciation can attract foreign investment and boost the stock market. Finally, exchange rate volatility can affect investor confidence and uncertainty, thereby influencing stock market performance. In summary, exchange rates have far-reaching

effects on the stock market, influencing international trade, interest rates, foreign investment, and investor sentiment.

The relationship between foreign exchange rates and stock markets has sparked extensive research and scholarly debate around the world. Scholars approached this topic from various theoretical perspectives, yielding a variety of conclusions. The goods market theory and the portfolio balance theory are two prominent approaches.

Dornbusch & Fischer (1980)'s goods market theory contends that there is a causal relationship between exchange rates and stock prices. Exchange rate fluctuations, according to this theory, have a direct impact on stock prices. Changes in exchange rates affect the competitiveness of a country's exports and imports, affecting the performance of domestic firms. When a country's currency rises in value, exports become more expensive, resulting in lower demand and potentially lower stock prices. A currency depreciation, on the other hand, can make exports cheaper, stimulating demand and potentially raising stock prices.

In contrast, the portfolio balance theory of Frankel (1992) as well as Branson & Henderson (1984), suggests negative correlations of stock prices and exchange rates. The focus of this theory is on portfolio rebalancing and capital flows. Portfolio adjustments made by investors, according to the portfolio balance theory, can influence exchange rates. For example, if stock prices rise, investors may shift their portfolios toward stocks, resulting in foreign capital inflows and domestic currency appreciation. A decline in stock prices, on the other hand, may result in portfolio adjustments favoring foreign assets, resulting in capital outflows and a depreciation of the currency.

These opposing theories offer distinct viewpoints on the relationship between exchange rates and stock prices. While the goods market theory focuses on the effect of exchange rates on stock prices, on the other hand the portfolio balance theory focuses on the indirect impact of stock prices on exchange rates via portfolio rebalancing and capital flows.

These theoretical frameworks have sparked extensive research and debate among academics, which resulted in foreign exchange rates and stock markets dynamics to be understood more. Researchers hope to learn more about the intricate interplay between exchange rates and stock prices around the world by investigating and analyzing the empirical evidence and implications of these theories.

2.2. Empirical Literature

2.2.1. How Oil Impacted Exchange Rate

The literature review highlights various studies examining the relationship between oil prices and exchange rates. Sari et al. (2010, p. 362) find no relationship between oil prices and the dollar/Euro exchange rate but identify a relationship with metal prices. Lizardo & Mollick (2010) note that when oil prices rise, the USD depreciates against oil exporter country currencies. Ferraro et al. (2015, p.137) show that major commodity export price changes have a strong relationship with exchange rates, but the co-movements are less visible when data is lagged. Das & Dutta (2020, p.193) find that oil prices forecast exchange rates and interest rates in the short run for Bangladesh, while metal prices have short and long-run forecasting ability. Wang et al. (2020, p. 94) and Breen & Hu (2021, p. 25) both demonstrate that oil prices are good indicators of exchange rate movements in oil-exporting countries, especially at daily frequencies. Tiwari et al. (2013) reveal a correlation between oil movements and exchange rate fluctuations in Romania, an oil-producing but importing country, using wavelet-based models. Finally, Guo & Ye (2021, p. 12) indicate that certain currencies had significant correlations during the 2008 crisis using quantile association regression. Overall, these studies emphasize the importance of considering oil exporter countries, frequency-based movement differences, and improved modeling techniques in analyzing the relationship between oil prices and exchange rates.

When we look at the literature it is visible that oil prices have a more significant effect if the country's major export product is oil or oil related. Another observable result from the literature is that when better models are used, especially with wavelet-based models, there seems to be a correlation between oil and currency on daily or even weekly frequencies. So, we will consider these as we progress through the thesis.

2.2.2. How Oil Impacted the Stock Market

The literature review encompasses several studies examining the relationship between oil prices and stock markets. Filis et al. (2011) find a negative correlation between oil prices and stock markets in three importer and three exporter countries, with no correlation between oil exporters and importers. Kapusuzoglu (2011, p. 103) identifies a long-term correlation between oil prices and stocks in the Istanbul Stock Exchange. Oskooe (2012,

p. 410) contradicts the expected results by showing no volatility spillover between Iran's stock market and oil prices. Asteriou et al. (2013, p. 117) analyze multiple models across 31 countries, distinguishing between oil importers and exporters, and find a more significant correlation in oil importing countries, with potential impact differences between developed and developing nations. Y. Wang et al. (2013) highlight the importance of a nation's import/export status and the significance of oil to the national economy in determining the relationship between oil prices and stock markets. Sim & Zhou (2015) demonstrate that negative shocks have a greater influence on the US stock market compared to weak positive shocks. Narayan & Gupta (2015, p. 22) employ a large dataset spanning 150 years and find that oil prices predict US stock returns, with both negative and positive changes in oil prices being significant predictors, albeit negative changes exhibiting greater significance. Zhang (2017) suggests that oil prices do not significantly affect the international stock market, except during major shocks. Hashmi et al. (2021) employ a quantile ARDL model and observe an asymmetric effect on the short run between stock markets and oil prices in various oil-exporting and importing countries. Overall, these studies reveal mixed findings regarding the relationship between oil prices and stock markets, highlighting factors such as import/export status, economic significance, and the direction of oil price changes as influential variables.

Studies show that demand shocks like 2008 crises are more likely to affect the correlation between stock markets and oil prices than supply shocks. There is also a distinction between oil importing and exporting countries. The oil exporting or economies highly dependent on oil prices are much more sensitive to oil price movements. But there doesn't seem to be an opposite movement for oil importers and exporters.

2.2.3. How the Exchange Rate Impacted the Stock Market Empirically

Mun (2004)'s study suggests that higher foreign exchange rate variability leads to higher local stock market volatility, but lower US stock market volatility. The local market is more affected by exchange rate changes than the US market because they are more correlated. However, the exchange rate fluctuations have only a minor effect on the US/local equity market correlation. A study conducted (Sensoy & Sobaci, 2014) between 2003-2013 reveals that short term volatility shocks create abrupt changes in the dynamic correlations between lira and BIST100.

Narayan et al. (2020, p. 197) finds out that the stock market returns for COVID-19 period of Japanese yen is 71%, but pre COVID-19 the returns are between 24% and 49%. The study shows that the exchange rate sensitivity of the stock market is higher during crisis times. Another study (Ahmed, 2020) trying to evaluate Egypt's monetary policies show that there is consistent long-term impact across timelines. Study also finds that depreciation of the currency is much more effective on the stock market.

Studies across a variety of countries show that exchange rate depreciation has more impact than appreciation. They also show that the bigger the company the less it gets affected by the depreciation.

2.2.4. The Triangle of Oil, Currency, and Stock Market

The literature review encompasses a range of studies investigating the relationships between oil prices, currency exchange rates, and stock markets. Basher et al. (2012, p.237) find that rising stock prices in emerging markets temporarily lower the US dollar exchange rates and emerging market stock prices, while oil prices rise concurrently. Barunik et al. (2013) demonstrate an increasing correlation between oil, gold, and stock markets after the 2008 crisis. Smiech & Papiez (2013, p. 201) analyze the German stock market and USD/EUR exchange rate and find that the relationship between variables varies depending on stock market volatility. Mensi et al. (2014, p. 16) study the BRICS countries and reveal correlations between their stock markets and global stock and commodity markets, including oil and gold. Jain & Biswal (2016) examine the Indian Rupee, oil price, gold price, and Indian stock market, finding that falls in gold and crude oil prices affect the value of the Indian Rupee and the stock market. Raza et al. (2016, p. 300) show that gold prices have a positive effect on BRICS stock markets but a negative impact on small emerging economies, while oil prices have a negative impact on all emerging country stock markets. Bouri et al. (2017, p. 205) study India and find high co-integration between oil, gold, and the stock market. Singhal et al. (2019, p. 261) focus on Mexico and demonstrate that gold affects the stock market positively, while oil has a negative impact, and the exchange rate is affected by oil in the long run. Tian et al. (2021, p. 16) analyze China and highlight the role of oil volatility as a major indicator of exchange rate and stock market volatilities. Adenekan et al. (2020) study Nigeria and reveal the interrelationships between oil, currency, and stock market performance. Toparlı

et al. (2019) focus on Turkiye and find significant time variation in the effects of variables on stock market returns, with real crude oil price shocks being less significant compared to exchange rate and interest rate shocks. Overall, these studies provide insights into the complex interactions between oil prices, currency exchange rates, and stock markets in various countries, highlighting the importance of volatility, time variation, and the specific characteristics of each economy.

Most studies show that after the 2008 crisis the stock market has been more reliant on/connected to other economic factors like oil, gold, or exchange rate. The studies show that there is higher correlation between 3 variables when the country's economy is dependent on oil.

2.2.5. Studies Considering Islamic Stocks

Study of Hussin et al. (2012, p. 88) about oil prices, exchange rate and Islamic stock market of Malaysia uses VAR model over the period of 2007-2011 with monthly data. The study shows that Islamic stock prices are highly positive co-integrated with oil price and negatively less co-integrated with exchange rate.

The study of Hanif (2020, p. 156) on Pakistan, oil importing country, between 2009-2020 focuses on oil, gold prices, exchange rate and Islamic and conventional stock market. Study finds that oil is causing movements on conventional and Islamic stocks while exchange rate and gold prices negatively correlate on higher significance values. Which means that oil correlation is much more robust.

Study of Chang et al. (2020) uses quantile regression approach to search the impact of oil prices on Islamic stocks. Study shows that end quantiles of oil negatively affect the tail quantiles of Islamic stock.

Study of Mishra et al. (2019, p. 298) uses Wavelet-based Quantile-on-Quantile Regression Model on daily data from 1996 to 2018. Study analyzes the relation of oil prices with Dow Jones Islamic Stock Index. The study finds out that fluctuations of the oil prices have a positive effect on Islamic stock market but when the prices reach stability the effect becomes negative.

As seen there are studies looking for relation on global Islamic stocks and oil prices. And there are some studies searching for more local, nation wise correlations of oil prices,

exchange rates and Islamic Stock Market. The closest study to our study seems to be Hanif (2020)'s work which not only looks into a correlation of oil with Islamic stock market but also considers exchange rate meanwhile. While doing so it also compares conventional stock market's results with Islamic stock market in Pakistan.

2.3. Gap in the Empirical Literature

As it is seen above there are plenty of studies (Baghestani & AbuAl-Foul, 2020; Atems et al., 2015; Amano & van Norden, 1998) considering oil-exchange rate relations. There are studies (Fang et al., 2018; Richard & Philip, 2015; Usman & Siddiqui, 2019) also considering oil price and stock market relations. The studies (Asri & others, 2017; Hyde, 2007) considering exchange rate and stock market relationship are somewhat less. Most probably the cause is oil price is much more correlated with stock market than exchange rate is with stock markets. So studies are seemingly more concentrated on oil.

But there are still some studies covering these three variables. These studies (A. Mishra, 2019; Sanusi & Kapingura, 2022) are much more valuable for our study because they are both covering oil prices effect and exchange rate effect on the stock market at the same time. So seeing them comparatively on the same picture is crucial. Even though these studies are an important source of knowledge, still these studies do not cover what we are looking for.

What we are looking for is the comparative analysis of Islamic and conventional stock markets both for importing countries and exporting countries. So when we look at studies covering Islamic stock market, we see that some studies (Hussin et al., 2012) only cover Islamic stock relations, not putting conventional stock into account or comparing them. Some studies (Chang et al., 2020) do not cover exchange rate as a factor on the equation with oil prices. Some studies like the one of (Hanif, 2020) are covering a single country. These countries are mostly oil importing like Malaysia and Pakistan. But none of the studies compare two countries.

As a result, we see that there is no study doing a 3 dimensional (Exporting/Importing, Islamic/Conventional, oil price-exchange rate) comparison as we are trying to do in this study. This study will give an in depth look into this 3 dimensional research. Having fewer countries is an opportunity to have a closer look to this relation even considering a 4th

dimension, which are external factors like politics or economic crises that might affect the flow of these complex relations.

SECTION 3: METHODOLOGY

3.1. Data and Variables

Data has been collected from Bloomberg. The data consists of 7 variables. 4 variables for each country, which one of the variables (oil) is common for two countries. The data starts at 11/30/2007 and ends at 3/9/2022. The data variables have been abbreviated to have a simplistic data reading. “Oil” is the abbreviation of “US Crude Oil WTI Cushing OK Spot”. “Lira” is the abbreviation of “Turkish Lira Spot”. “Ruble” is the abbreviation of “Russian Ruble SPOT (TOM)”. “MsciTr” is the abbreviation of “MSCI Turkiye Index”. “MsciRs” is the abbreviation of “MSCI Russia Index”. “MsciTrIsl” is the abbreviation of “MSCI Turkiye Islamic Index”. “BMI” is the abbreviation of “S&P Russia BMI Shariah (USD)”.

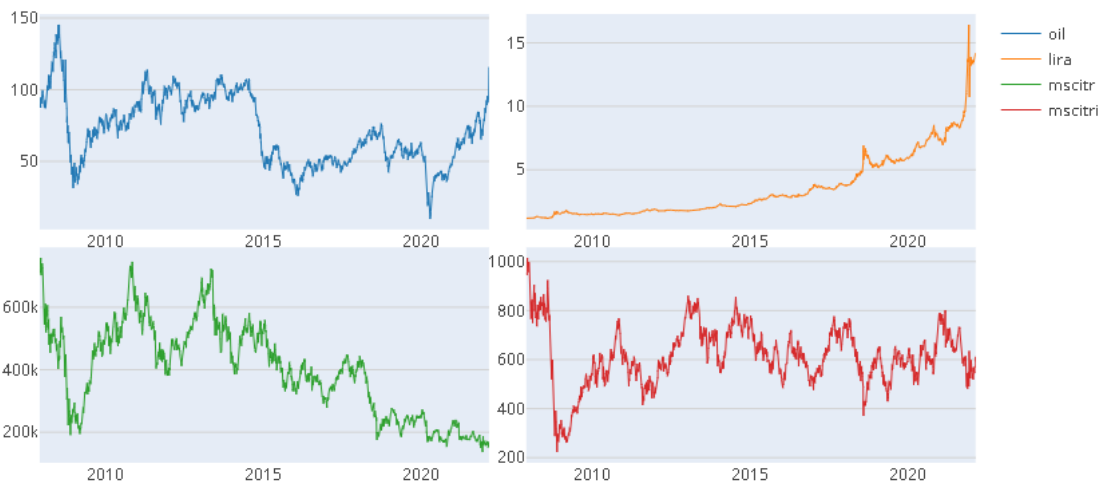
The data covers more than 14 years of a time interval. On a daily basis the data is expected to have 5213 inputs. But the data only covers weekdays, which the expected weekdays in the time interval is 3583. After deleting the missing data in the timeline, we are left with 3357 inputs, which also means we have deleted approximately 6 percent of the data. As a result, we are left with the data that does not have a specific frequency.

3.1.1. Turkiye

Table 1: Preview of Turkiye Related Data

	Oil	Lira	MCSITr	MCSITrIsl
2007-11-30	88.71	1.18	714644	950.81
2007-12-03	89.31	1.18	716553	953.03
2007-12-04	88.32	1.19	710215	944.15
2007-12-05	87.49	1.18	735710	981.41
2007-12-06	90.23	1.18	744893	1002.02
2022-02-25	92.59	13.82	162004	572.58
2022-02-28	95.72	13.87	163211	569.86
2022-03-01	103.41	13.98	164998	588.26
2022-03-02	110.60	14.10	164845	601.37
2022-03-03	107.67	14.17	167363	611.52
2022-03-04	115.68	14.19	162647	592.24

Source: Created by the author



Graph 1: Line Graph of Turkiye Related Data

Source: Created by the author

Table 2: Summary Statistics of Turkiye Related Data

	Oil	Lira	MCSITr	MCSITrIsl
Mean	71.493	3.5	398696	614.7
Variance	564.2	6.65	21061210573	14690.2
Skewness	0.257	1.73	0.035	-0.022
Ex. Kurtosis	-0.67	3.23	-0.94	0.68
JB	100.5	3127.78	125.12	92.4
ERS	-1.57	3.95	-0.025	-0.88

Source: Created by the author

The analysis above is done according to the given studies: D’Agostino (1970), Anscombe & Glynn (1983), Jarque & Bera (1980), T. J. Fisher & Gallagher (2012), and Elliott et al. (1992)

Correlation Between Variables:

Table 3: Pearson Correlation Matrix of Turkiye Related Data

	Oil	Lira	MCSITr	MCSITrIsl
Oil	1			
Lira	-0.369, -0.539**	1		
MCSITr	0.599, 0.392*, -0.539**	-0.777	1	
MCSITrIsl	0.336	-0.044	0.46, 0.294*	1

*Kendall Correlation

**Spearman Correlation

Source: Created by the author

3.1.1.1. Oil

Overall, the dataset is skewed to the right and has a high variance, indicating that there are potentially some extreme values in the dataset. The distribution is not normal, and the tails are thinner than a normal distribution, meaning that extreme values are less likely to occur. Oil doesn’t seem to be highly correlated with any variable.

3.1.1.2. Lira

Overall, the dataset is heavily skewed to the right, with a high variance and high excess kurtosis. This indicates that the dataset may have some extreme values and that the distribution is not symmetrical. The JB test and ERS indicate that the distribution is not normal and heavily skewed to the right. Lira seems to be highly correlated with conventional stocks.

3.1.1.3. MSCI Turkiye

Overall, the dataset has a high variance and is slightly skewed to the right, meaning that there may be some extreme values in the dataset. However, the platykurtic distribution and low excess kurtosis suggest that there are fewer extreme values than expected in a normal distribution. The dataset is not normally distributed, as indicated by the JB test. MSCITr is highly correlated with lira and oil.

3.1.1.4. Islamic Turkiye

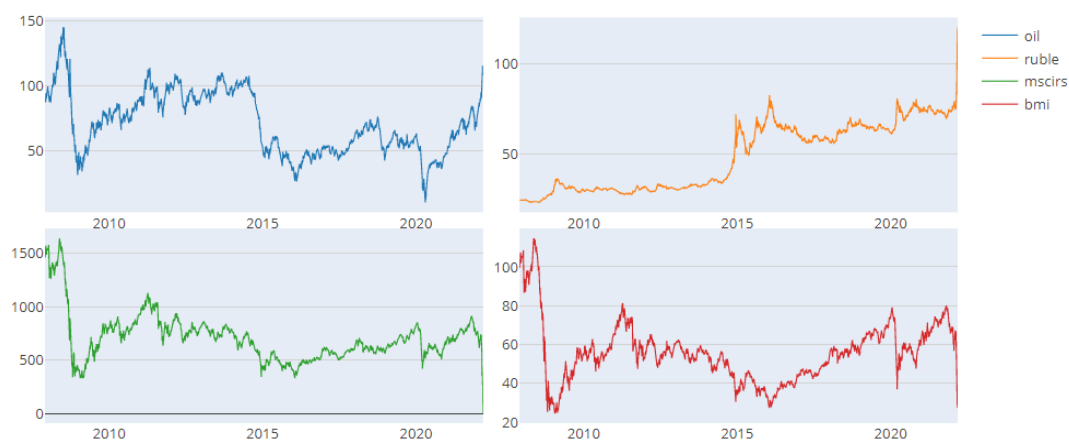
Overall, the dataset has a moderate variance and is slightly negatively skewed, meaning that there may be some values on the lower end of the range that are slightly more extreme than would be expected in a normal distribution. The slightly leptokurtic distribution and positive excess kurtosis suggest that there may be slightly more extreme values than expected in a normal distribution. The dataset is not normally distributed, as indicated by the high JB value.

3.1.2. Russia

Table 4: Preview of Russia Related Data

	oil	ruble	msirs	bmi
2007-11-30	88.71	24.45	1470.13	100
2007-12-03	89.31	24.47	1462.24	99.36
2007-12-04	88.32	24.40	1472.20	100.28
2007-12-05	87.49	24.48	1526.18	103.96
2007-12-06	90.23	24.49	1517.65	103.45
2022-02-25	92.59	105.27	447.39	43.67
2022-02-28	95.72	106.04	325.37	33.86
2022-03-01	103.41	108.54	305.30	32.43
2022-03-02	110.60	102.85	301.21	32.67
2022-03-03	107.67	109.90	317.26	33.90
2022-03-04	115.68	122.54	274.73	29.78

Source: Created by the author



Graph 2: Line Graph of Russia Related Data

Source: Created by the author

Table 5: Summary Statistics of Russia Related Data

	Oil	Lira	MCSITr	MCSITrIsl
Mean	71.493	48.5	710.16	55.85
Variance	564.2	343.5	50206.5	234.69
Skewness	0.257	0.17	1.5	0.96
Ex. Kurtosis	-0.67	-1.5	3.472	1.884
JB	100.5	327.12	3017.45	1012.75
ERS	-1.57	2.5	0.18	-0.18

Source: Created by the author

The analysis above is done according to the given studies: D'Agostino (1970), Anscombe & Glynn (1983), Jarque & Bera (1980), T. J. Fisher & Gallagher (2012), and Elliott et al. (1992)

Correlation Between Variables:

Table 6: Correlation Matrix of Russia Related Data

	Oil	Lira	MCSITr	MCSITrIsl
Oil	1			
Lira	-0.723 , -0.479*	1		
MCSITr	0.745	-0.534, -0.441*	1	
MCSITrIsl	0.578, 0.364*	0.213	0.918 , 0.695*	1

*Spearman Correlation

Source: Created by the author

3.1.2.1. Oil

Oil Data is common in two countries, and the data has been analyzed previously. But for Russia related data we may say that oil is much more correlated with Ruble and the stocks, especially with MSCIRs.

3.1.2.2. Ruble

Overall, the dataset has a moderate variance and is slightly skewed to the right, meaning that there may be some extreme values in the dataset. However, the platykurtic distribution and negative excess kurtosis suggest that there are fewer extreme values than expected in a normal distribution. The dataset is not normally distributed, as indicated by the JB test. Ruble doesn't seem to be highly correlated with variables other than oil.

3.1.2.3. MSCI Russia

Overall, the dataset has a high variance and is highly skewed to the right, meaning that there are likely many extreme values in the dataset. The highly leptokurtic distribution and positive excess kurtosis suggest that there are many more extreme values than would be expected in a normal distribution. The dataset is not normally distributed, as indicated by the high JB value. MSCI Russia seems highly correlated with oil and BMI.

3.1.2.4. Islamic Russia BMI

Overall, the dataset has a moderate variance and is moderately skewed to the right, meaning that there may be some extreme values in the dataset, but not as many as in a highly skewed distribution. The moderately leptokurtic distribution and positive excess kurtosis suggest that there are more extreme values than would be expected in a normal distribution, but not as many as in a highly leptokurtic distribution. The dataset is not normally distributed, as indicated by the JB test. BMI seems to be highly correlated with MSCIRs.

For deeper understanding correlations will be analyzed through wavelet coherence model and Network connectedness approach.

3.2. Model Specification

3.2.1. Wavelet Coherence

The goal of this research was to identify the co-movement and lead-lag relationships among oil prices, exchange rates, and Islamic and conventional stock indices over a range of investment frequencies and time scales. In order to accomplish this, we used a wavelet

coherence method to look at the correlation patterns between these series in the provided time-frequency domains.

In contrast to conventional econometric models, which individually analyze frequency and time components, the wavelet technique simultaneously provides a three-dimensional analysis that takes into account the frequency, time, and strength of correlation between these components. Also with arrows given in the graph, there are also clues for lead and sign of the correlation. First off, the wavelet technique enables us to compute and analyze dynamic correlations between financial series rather than assuming static ones (Bodart & Candelon, 2009); Second, it enables us to identify structural breaks in financial series and total radical shift in correlation/frequencies Thirdly, it enables us to identify causal relations at different frequencies. Finally, because it is a model-free approach, it is more flexible than approaches that are constrained by the number of parameters and selected estimation model (Vacha & Barunik, 2012). The following is the econometric equation for the model (Grinsted et al., 2004):

$$R_n^2(S) = \frac{|s (s^{-1} W_n^{XY}(S))|^2}{s(s^{-1} |W_n^X(S)|_2 \cdot S(s^{-1} |W_n^Y(S)|^2)}$$

S is used as a smoothing operator in this equation. Convolution that is both time- and scale-convoluted is used to achieve smoothing. This action is required. The wavelet coherence will always equal 1 in the absence of smoothing at all estimated scales and times.

$$S(W) = S_{scale} (S_{time}(Wn(s)))$$

The operators S_{time} and S_{scale} signify smoothing in the time and scale axes, respectively, in the equation. Typically, a smoothing operator based on the chosen wavelet model is utilized. We chose these operators because they have properties that are similar to those of the applied model because we employed the Morlet wavelet technique in this case.

$$S_{time} (W) |s = \left(Wn (s) \times c_1^{\frac{-t^2}{2s^2}} \right) ; S_{time} (W) |s = Wn (s) \times c_2 \Pi(0.6s) |s$$

where C_1 and C_2 are normalization constants, and the name "rectangle function" refers to it. The scale decorrelation length was 0.6 factors since the Morlet wavelet was the model that was used (Torrence & Compo, 1998). The linear correlation between two stationary series is measured at each scale using the coefficient in wavelet coherence, and it ranges from $0 \leq R_n^2(S) \leq 1$. W_n^{XY} . The crosswavelet power, or W_n^{XY} , aids in locating areas in time-scale spaces where there is a particularly high common power between time series. The cross-wavelet power representation of two time-series $y(t)$ and $x(t)$ is shown below:

$$W_n^{XY}(S) = W_n^X(S)W_n^{*Y}(S)$$

The term $*$ expresses the complex conjugate and $W_n^X(S)$ and W_n^{*Y} indicate the continuous wavelet transform for the respective one of these two series, $y(t)$ and $x(t)$.

$$\phi_n^{XY} = \tan^{-1} \left(\frac{I\{S(s^{-1}W_n^{XY}(s))\}}{R\{S(s^{-1}W_n^{XY}(s))\}} \right)$$

Here, "R" and "I" stand for the smooth power spectrum's real and imaginary portions, respectively.

3.2.2. Network Connectedness (Quantile VAR model)

We must note the important contribution of from the analytical perspective of spillover connection in financial markets (Diebold & Yilmaz, 2009). They used novel techniques for condensing FEVDs to build the generalized VAR-based empirical methodology for connectedness and spillovers. They produce dynamic results in their work using the common rolling-windows strategy. However, authors like Koop et al. (2019) who introduced Bayesian TVP-VAR and shown that TVP-VAR-based dynamic connectedness assessments are more reliable than results from rolling-window VAR retrievals allowed for the development of alternative methods for producing dynamic outcomes. With these methodological achievements in mind, we broaden the scope of the literature's application by using quantile connectivity in this study.

In order to evaluate the connectivity between the global uncertainty indices and sectoral indices of PSX, we used a unique econometric estimation approach to the quantile connectedness extended by Chatziantoniou et al. (2021). For a number of reasons, the quantile spillover framework is unique and superior to the current approaches. To start, it divides the idiosyncratic component of the error process from the systematic component using a factor structure. It also handles the VAR residuals. Third, the idiosyncratic shock to each variable in the system can be isolated using the quantile spillover approach. Finally, using this methodology, one may examine the tails of the multivariate distribution, which show market ups and downs.

The quantile vector autoregression (QVAR) is first calculated:

$$z_t = \pi(\tau) + \sum_{j=1}^p \varphi_j(\tau) z_{t-j} + \omega_t(\tau)$$

where the initial differenced 1-year sectoral indices (SI), z_t and z_{t-1} , are endogenous variables, τ denotes the quantile of sectoral indices with a range of (0, 1), p denotes the QVAR approach lag length, $\pi(\tau)$ denotes the conditional mean vector, $\varphi(\tau)$ denotes the QVAR coefficient, and $\omega_t(\tau)$ denotes an error term with a $k \times k$ dimensional variance and covariance matrix $(\Sigma(\tau))$. We have used World's theorem, which states that

$$z_t = \pi(\tau) + \sum_{j=1}^p \varphi_j(\tau) z_{t-j} + \omega_t(\tau) = \pi(\tau) + \sum_{i=0}^{\infty} \delta_i(\tau) \omega_{t-i}$$

converting QVAR(p) into QVMA (∞).

Then, to investigate the impact of a shock from variable j on variable I , we compute the H -step-ahead Generalized Forecast Error Variance Decomposition (GFEVD), leading to the formulation of the following equation (Koop et al., 1996; Pesaran & Shin, 1998):

$$\varphi_{ij}^k(H) = \frac{\Sigma(\tau)_{ii}^{-1} \sum_{h=0}^{H-1} (\varepsilon_i' \delta_h(\tau) \Sigma(\tau) \varepsilon_j)^2}{\sum_{h=0}^{H-1} (\varepsilon_i' \delta_h(\tau) \Sigma(\tau) \delta_h(\tau)' \varepsilon_i)}$$

$$\tilde{\varphi}_{ij}^k(H) = \frac{\varphi_{ij}^k(H)}{\sum_{j=1}^k (\theta_{ij}^k(H))}$$

ε_i represents a zero vector with unity at the i th position, and normalizing leads to the following two equivalences:

$$\sum_{j=1}^k \tilde{\varphi}_{ij}^k(H) = 1 \text{ and } \sum_{ij=1}^k \tilde{\varphi}_{ij}^k(H) = k$$

The following equation is created to calculate the total directional connectivity TO others in order to study the effect of i variable on j variables:

$$C_{i \rightarrow j}^k(H) = \sum_{j=1, i \neq j}^k \tilde{\varphi}_{ji}^k(H)$$

The following equation is designed to evaluate total directional connectivity FROM others measurements, or the effect of variables j on variables i :

$$C_{i \leftarrow j}^k(H) = \sum_{j=1, i \neq j}^k \tilde{\varphi}_{ij}^k(H)$$

The difference between total directional connection FROM others and TO others, or the net total directional connectedness, can be thought of as the net impact of i variable on the network under study:

$$C_i^k(H) = C_{i \rightarrow j}^k(H) - C_{i \leftarrow j}^k(H)$$

The updated total connectivity index (TCI) is finally calculated as follows:

$$TCI(H) = \frac{\sum_{ij=1, i \neq j}^k \tilde{\varphi}_{ij}^k(H)}{K - 1}$$

If the TCI is higher, the degree of network interconnectivity is higher.

SECTION 4: RESULTS AND DISCUSSION

4.1. Results

4.1.1. Oil and Lira on Turkiye's Conventional and Islamic Stock Markets

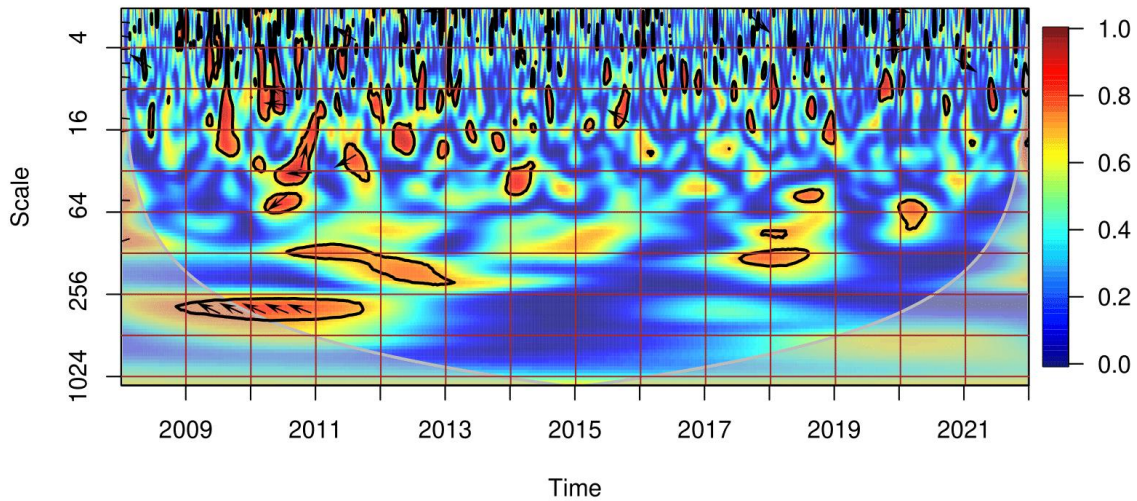
4.1.1.1. Wavelet Coherence Results

Wavelet coherence graphs between each pair of the chosen variables have been shown below to help illustrate the relative co-movement and volatility of the selected variables. The variables are Turkiye related variables, including oil, lira, MSCITr, and MSCITrIsl.

The wavelet phase associations for various pairs of variables are shown in the following figures. The frequency is displayed on the vertical axis, and the time is displayed on the horizontal axis. The regions with high and low correlations across the series are shown by the colors. Warmer hues (like red) indicate regions of higher correlation, whereas cooler hues (like blue) express regions of lower correlation or dependence between series.

The colors with red hue show regions with high interrelation and the yellow hue represents lower coherence. The colors with a blue hue show that there is no significant interrelation (insignificance) among the series. The leader and follower associations between the variables are shown by the arrows in the plots. In the phase, arrows moving to the right indicate a positive correlation between the variables, whereas arrows moving to the left show an opposite relationship.

Wavelet Coherence: Oil and Lira



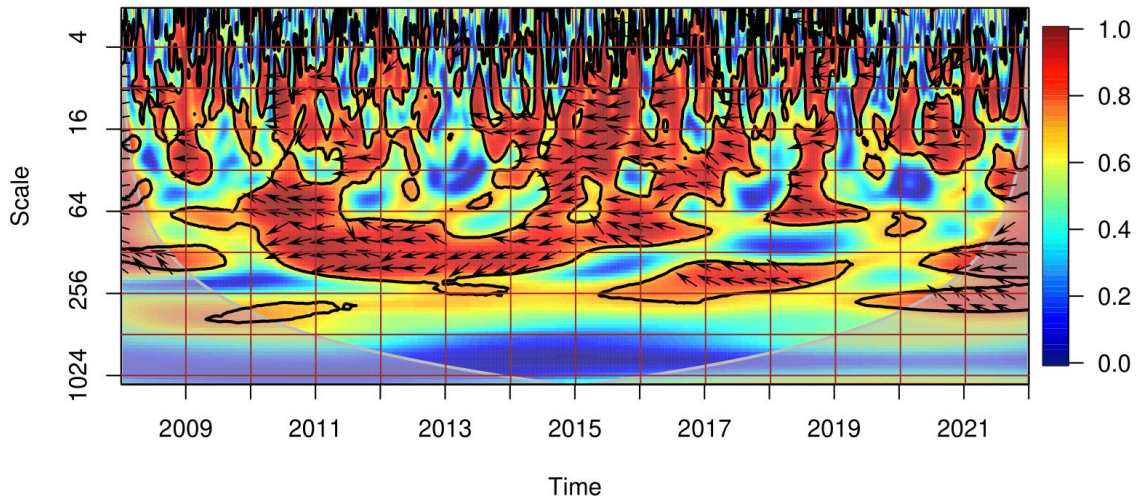
Graph 3: Wavelet Coherence Graph of Oil and Lira

Source: Created by the author

In general, the wavelet coherence shown in Graph 3 between lira and oil does not seem significant. But if we take a close look at the graph, some details may reveal themselves.

- In the 4–16 day frequency bands, separately from smaller correlation islets, there is visibly high correlation during 2009-2011.
- In the middle scale, 16-64 day frequency bands, there seems to be a significant correlation during 2010-2012.
- In frequency bands higher than 64 days, there is a significant correlation during the 2009-2012 period, in which oil is leading this negative link.

Wavelet Coherence: Lira and MSCITr



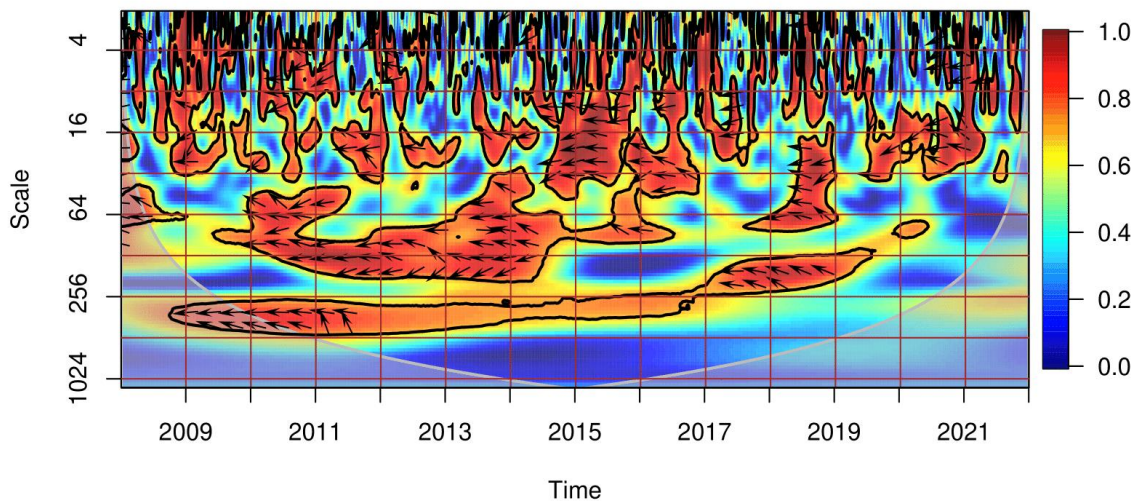
Graph 4: Wavelet Coherence Graph of Lira and MSCITr

Source: Created by the author

In general, the wavelet coherence shown in Graph 4 between lira and MSCITr is quite high under the 256 days frequency, and it seems to last through all times. As there is high frequency across all times and scales; let's check other details:

- There doesn't seem to be a consistent leader across time periods and scales.
- But the correlation seems to be consistently negative.

Wavelet Coherence: Lira and MSCITrIsl



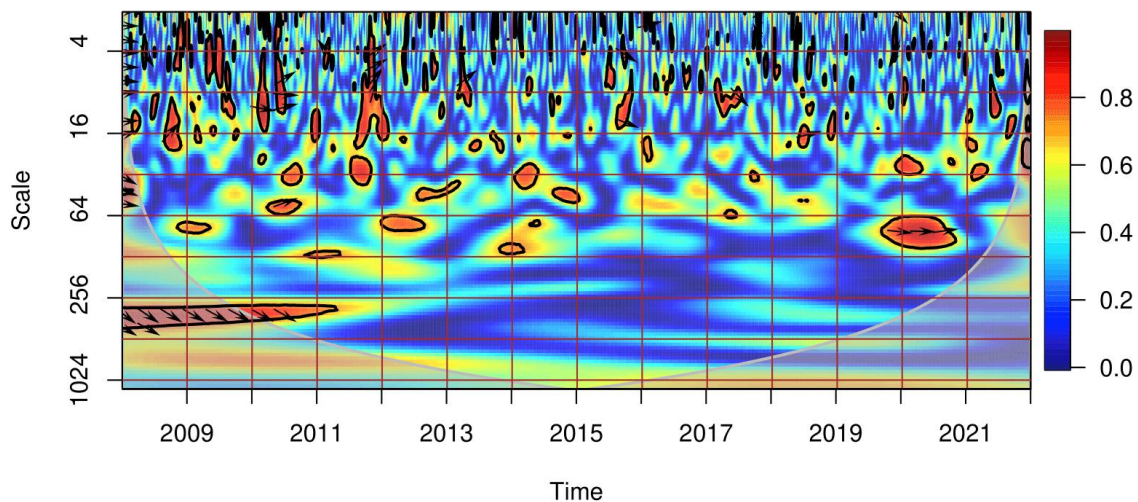
Graph 5: Wavelet Coherence Graph of Lira and MSCITrIsl

Source: Created by the author

We see that there is a similar picture in these results in this pair. The pair had a Pearson correlation of -0.044 but when looking at the graph above we see they do have an homogeneous distribution of correlation across time and frequencies. In general, the wavelet coherence shown in Graph 5 between lira and MSCITrIsl is negative with none leading. But when we have a closer look we can observe more details:

- In the 4–32 day and 16 - 64 day frequency bands, separately from smaller correlation islets, there is visibly high negative correlation during 2015.
- In the 64 - 256 day frequency bands, there is a consistent correlation, showing in the long run this pair is negatively co-moving.

Wavelet Coherence: Oil and MSCITr



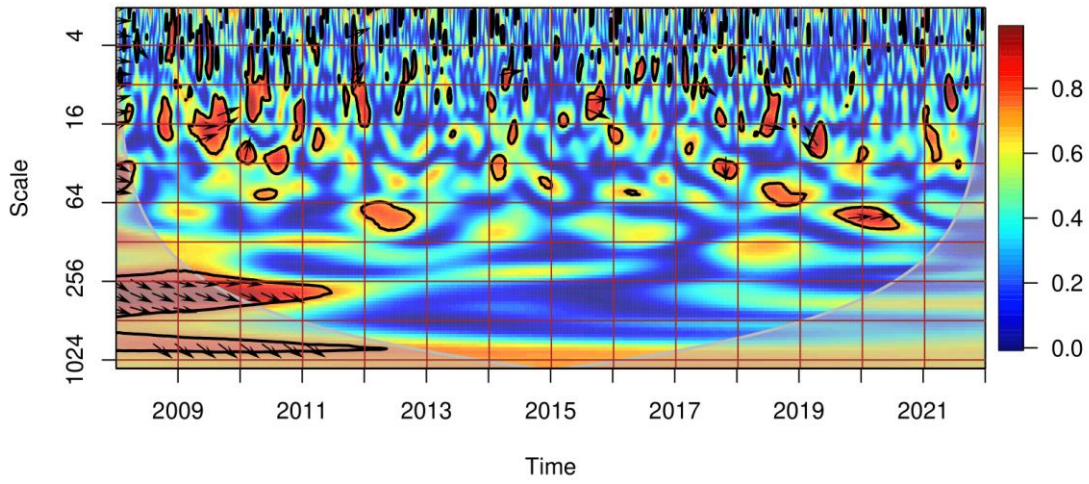
Graph 6: Wavelet Coherence Graph of Oil and MSCITr

Source: Created by the author

In general, the wavelet coherence shown in Graph 6 between lira and oil does not seem significant. But if we take a close look at the graph, some details may reveal themselves.

- In the 4–16 day frequency bands, separately from smaller correlation islets, there is visibly high correlation during 2012.
- In the middle scale, 16-64 day frequency bands, there seems to be no significant correlation.
- In frequency bands higher than 64 days, there is a positive correlation during 2020. Which can be interpreted as the effect of COVID-19.

Wavelet Coherence: Oil and MSCITrIsl

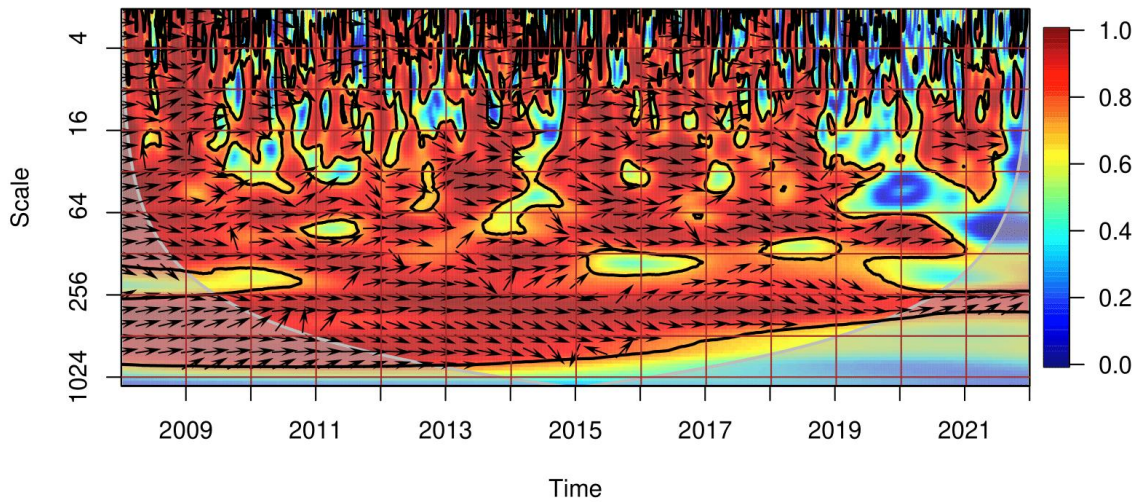


Graph 7: Wavelet Coherence Graph of Oil and MSCITrIsl

Source: Created by the author

The wavelet coherence shown in Graph 7 between oil and MSCITrIsl does not seem significant.

Wavelet Coherence: MSCITr and MSCITrIsl



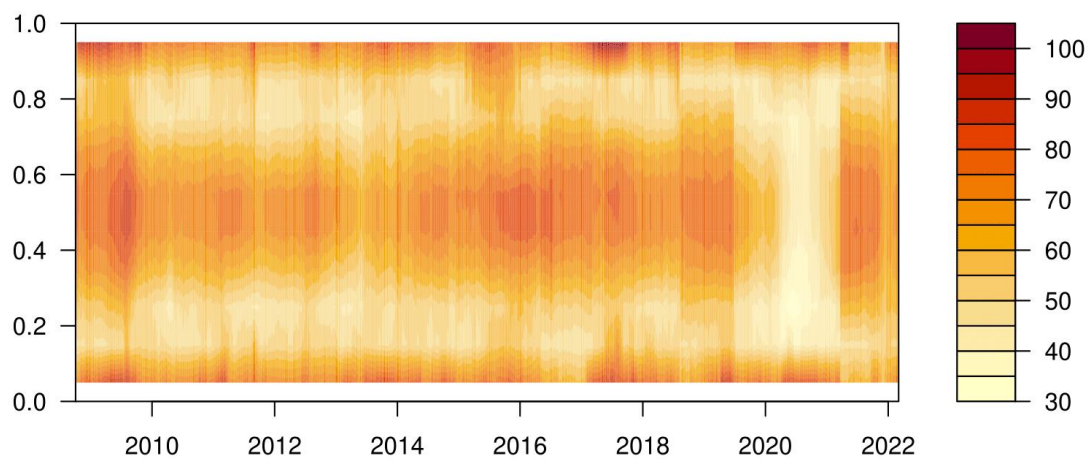
Graph 8: Wavelet Coherence Graph of MSCITr and MSCITrIsl

Source: Created by the author

The wavelet coherence shown in Graph 8 between MSCITr and MSCITrIsl is seems to be consistently positive with none leading. Except after 2019 there seems to be a fall in the correlation, which might be because of the 2019 currency crash of Turkish Lira which effected conventional stocks more.

4.1.1.2. Network Connectedness (QVAR) Results

In this section we are analyzing the Russia related graphs of 1-lagged network connectedness, with the quantile approach. For further Network Connectedness Approach results look at the Appendices.



Graph 9: Dynamic Total Connectedness Index for Lira and Both Turkiye Related Stock Markets

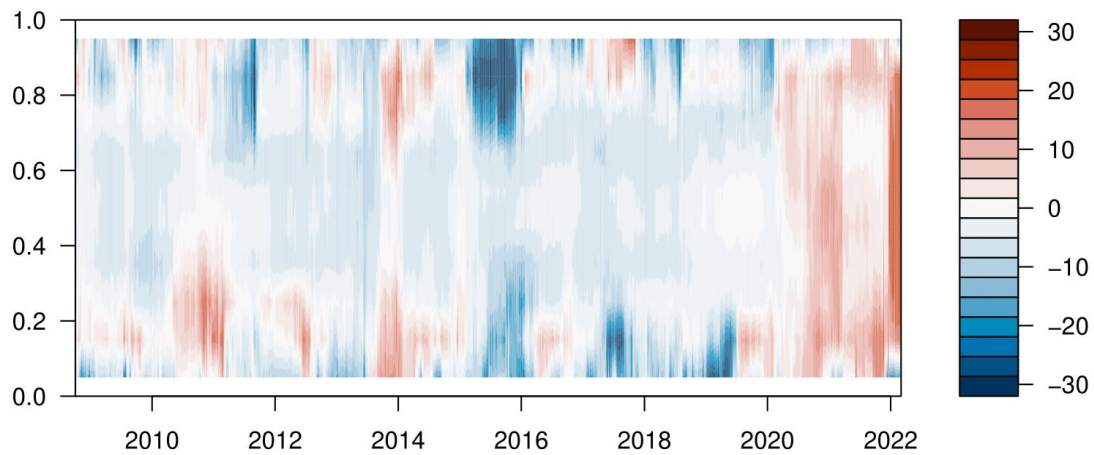
Source: Created by the author

A 200-day rolling window QVAR (1) and a 10-variant forecast are used to extract the heatmap. High connectivity is represented by the hot hue, whilst poor closeness is represented by the cool color. The chronology is shown on the x-axis, while the quantiles are shown on the y-axis.

In Graph 9, which is a picturized type of graph, complete dynamic connectedness is shown. Denser colored areas denote higher levels of connectedness in the plot. For the Turkiye-related data, connectedness is high above and below the 20% quantiles. In other

words, the connectedness of the Turkiye related data is balanced. The fifty percent quantile displays a recurring pattern of connectedness and represents the average connectedness over the entire data period. Thus, it indicates that Turkish Lira and both stock Markets are highly connected. Except after 2020 the COVID-19 pandemic we see the connectedness gets disrupted by the global crises.

Net Directional Connectedness:

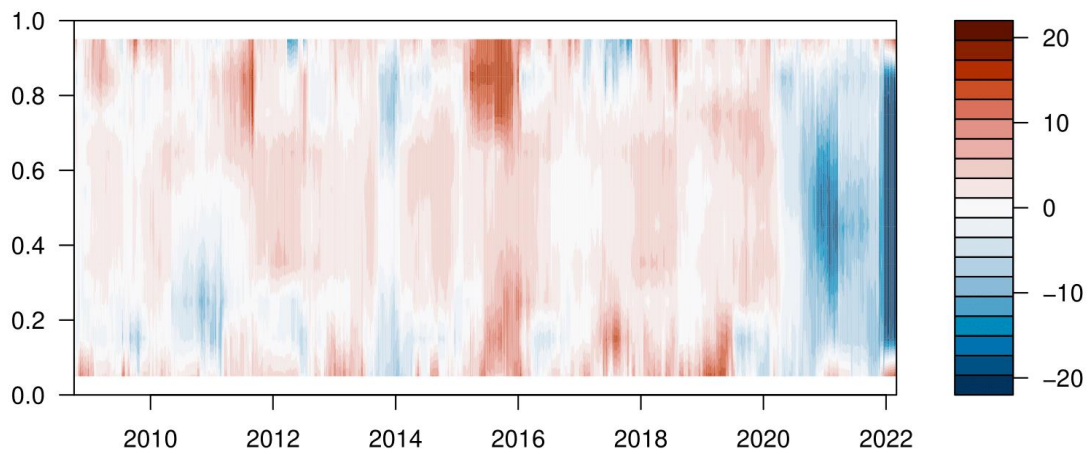


Graph 10: Net Total Directional Connectedness for the Lira Based on QVAR System

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

Net directional connectedness of lira is represented in Graph 10. Lira is seen to be a receiver across all times and scales except after 2020 the COVID-19 pandemic lira is contributing to the connectedness. But it should be mentioned that Turkish Lira doesn't seem to be highly connected in this group.

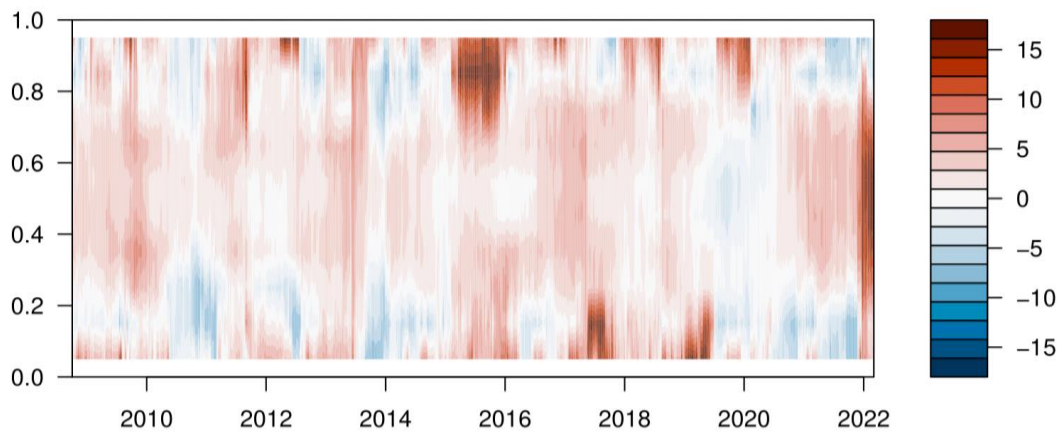


Graph 11: Net Total Directional Connectedness for the MSCITr Based on the QVAR System

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

Net directional connectedness of MSCITr is represented in Graph 11. MSCITr is seen to be a contributor across all times and scales except after 2020 the COVID-19 pandemic MSCITr is receiving from the connectedness. But it should be mentioned that MSCITr doesn't seem to be highly connected in this group. It is visible that conventional market and Turkish Lira changed roles after the global crises.



Graph 12: Net Total Directional Connectedness for the MSCITrIsl Based on the QVAR System.

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

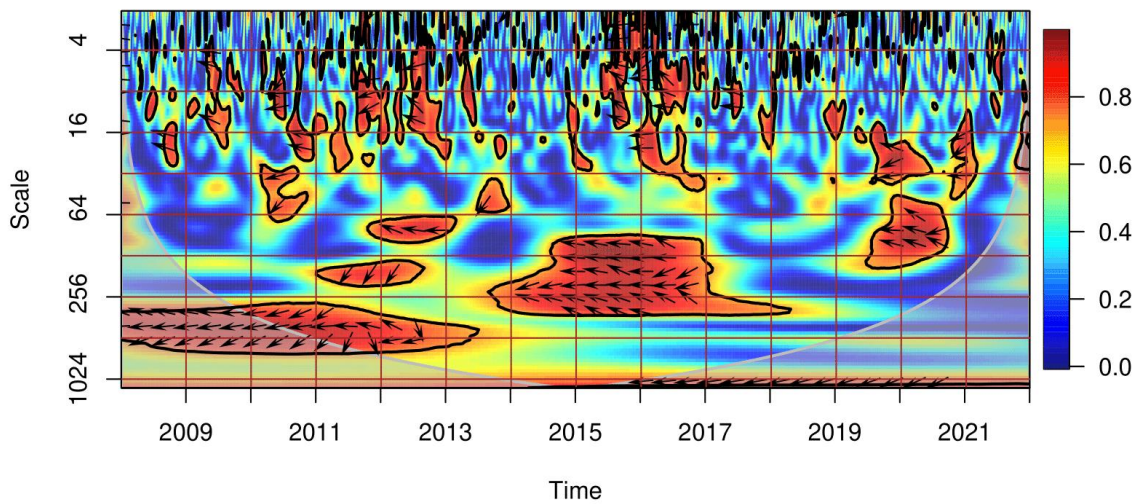
But different from Turkish Lira and MSCITr Islamic Stock Market of Turkiye doesn't seem to be highly effected from the COVID-19 pandemic. Net directional connectedness of MSCITr in Graph 12 seems to be a contributing across all times and scales.

4.1.2. Oil and Lira on Russia's Conventional and Islamic Stock Markets

4.1.2.1. Wavelet Coherence Results

Wavelet coherence graphs between each pair of the chosen variables have been shown below to help illustrate the relative co-movement and volatility of the selected variables. The variables are Russia related variables, including oil, ruble, MSCIRs, and BMI.

Wavelet Coherence: Oil and Ruble



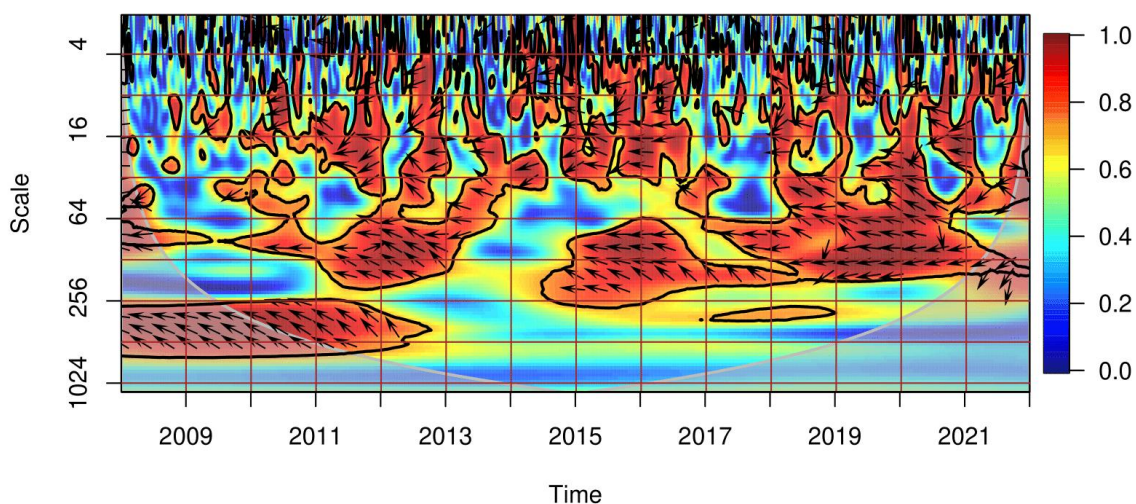
Graph 13: Wavelet Coherence Graph of Oil and Ruble

Source: Created by the author

In general, the wavelet coherence shown in Graph 13 between ruble and oil is variable across years and scales. Let's take a close look at the graph, for some details:

- In the 4–16 day frequency bands, separately from smaller correlation islets, there is visibly high negative correlation during 2010-2013 and 2015-2017 periods.
- In the middle scale, 16-64 day frequency bands, there seems to be a significant negative correlation in 2010, 2016, 2020, and 2021.
- In frequency bands higher than 64 days, there is a significant negative correlation during the 2011-2013, 2014-2017, and 2020 periods.

Wavelet Coherence: Ruble and MSCIRs



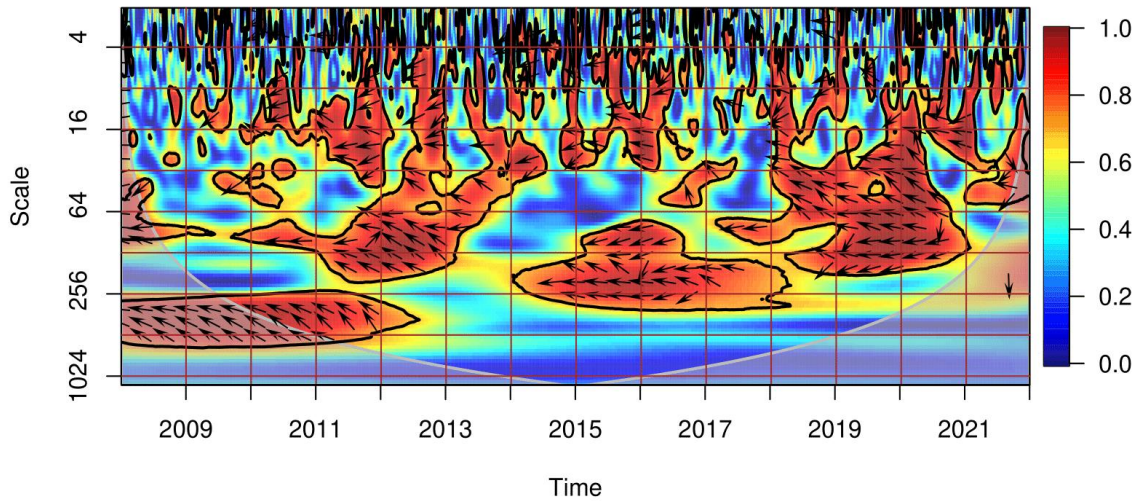
Graph 14: Wavelet Coherence Graph of Ruble and MSCIRs

Source: Created by the author

We see that there is a huge picture change when coming to wavelets results in this pair. The pair had a Pearson correlation of -0.53 but when looking at the graph above we see they have much more significant co-movements. In general, the wavelet coherence shown in Graph 14 between ruble and MSCIRs is quite high across all times, and it seems to last through all scales. As there is high frequency across all times and scales; let's check other details:

- Before 2011 on every scale the correlation between two variables seems to decrease.
- There doesn't seem to be a consistent leader across time periods and scales.
- But the correlation seems to be consistently negative.

Wavelet Coherence: Ruble and BMI



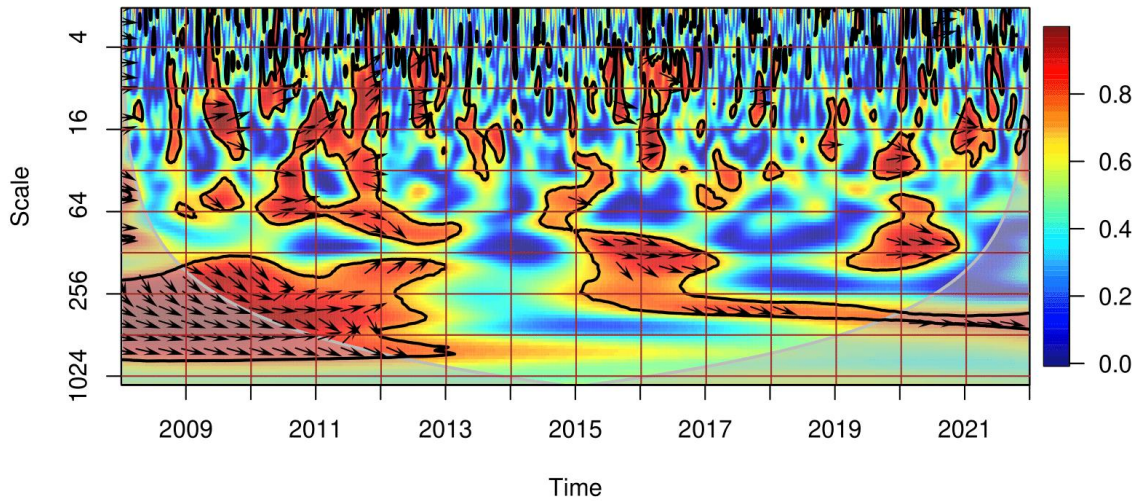
Graph 15: Wavelet Coherence Graph of Ruble and BMI

Source: Created by the author

In general, the wavelet coherence shown in Graph 15 between Ruble and BMI is quite high across all times, and it seems to last through all scales. As there is high frequency across all times and scales; let's check other details:

- Before 2011 on every scale the correlation between two variables seems to decrease.
- There doesn't seem to be a consistent leader across time periods and scales.
- But the correlation seems to be consistently negative.

Wavelet Coherence: Oil and MSCIRs

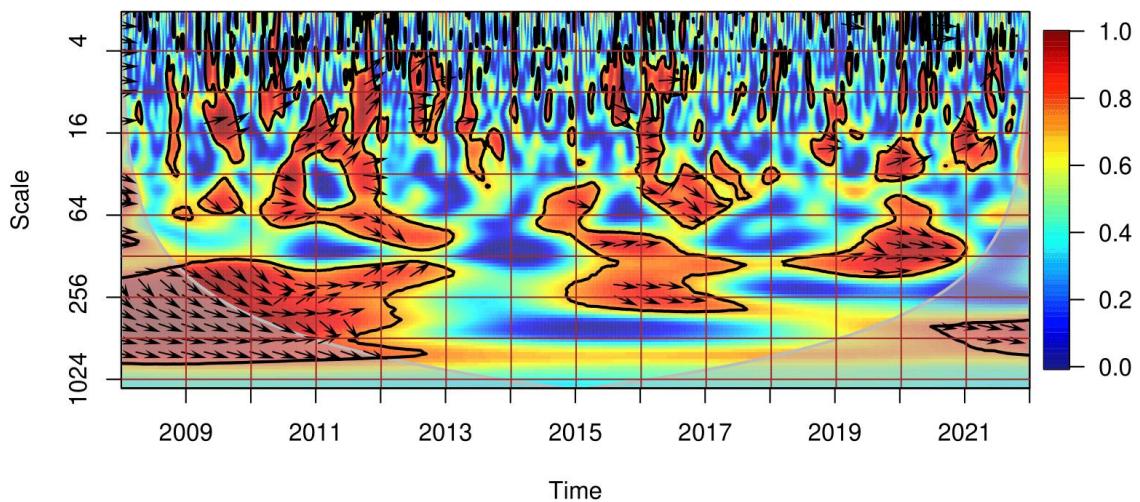


Graph 16: Wavelet Coherence Graph of Oil and MSCIRs

Source: Created by the author

In general, the wavelet coherence shown in Graph 16 between oil and MSIRs is variable across years. There is high positive correlation across all scales between 2009-2012, also between 2015-2017, and in 2020.

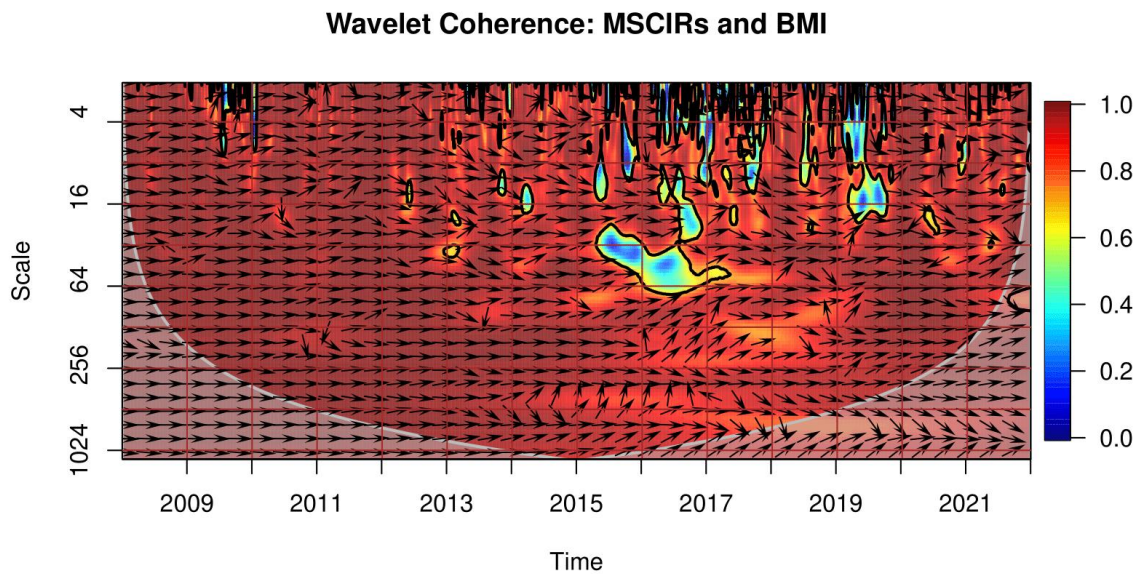
Wavelet Coherence: Oil and BMI



Graph 17: Wavelet Coherence Graph of BMI and Oil

Source: Created by the author

In general, the wavelet coherence shown in Graph 17 between BMI and oil is variable across years. There is high positive correlation across all scales between 2009-2012, also between 2015-2017, and in 2020.



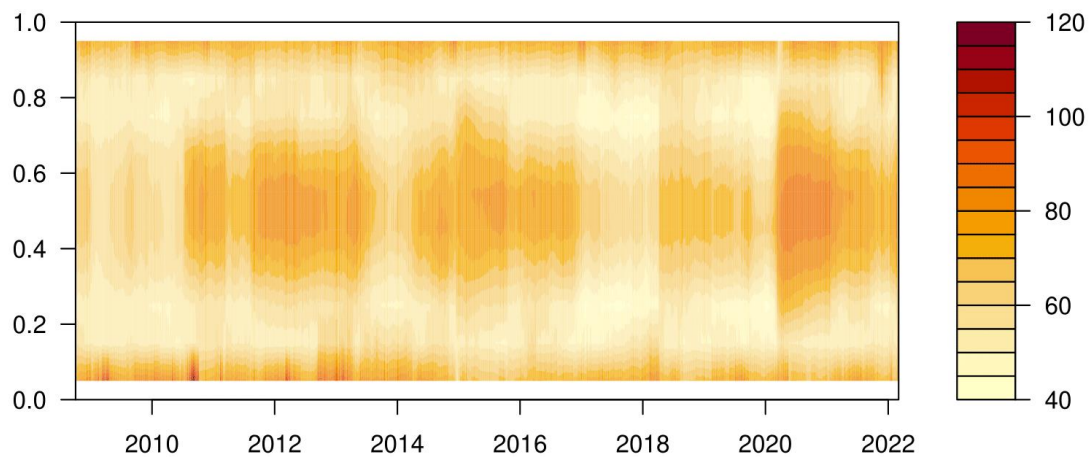
Graph 18: Wavelet Coherence Graph of BMI and MSCIRs

Source: Created by the author

The wavelet coherence shown in Graph 18 between BMI and MSCIRs is absolute across all times and scales.

4.1.2.2. Network Connectedness (QVAR) Results

In this section we are analyzing the Russia related graphs of 1-lagged network connectedness, with the quantile approach. For further Network Connectedness Approach results look at the Appendices.



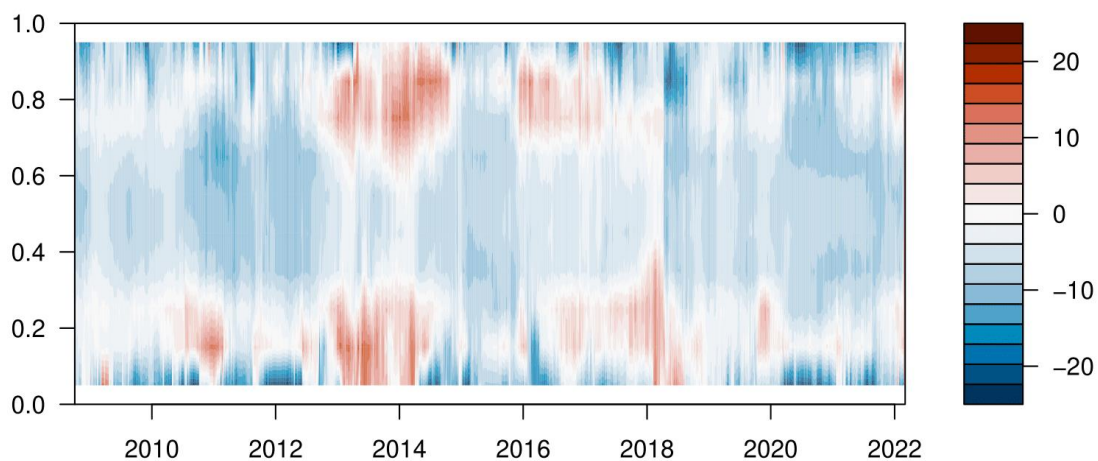
Graph 19: Dynamic Total Connectedness Index for Ruble and Both Russia Related Stock Markets

Source: Created by the author

A 200-day rolling window QVAR (1) and a 10-variant forecast are used to extract the heatmap. High connectivity is represented by the hot hue, whilst poor closeness is represented by the cool color. The chronology is shown on the x-axis, while the quantiles are shown on the y-axis.

Graph 19 shows total dynamic connectedness in a picturized type of graph where the darker colored area indicates higher levels of connectedness in the plot. Connectedness is high above and below of the 20% quantiles for the Russia related data. In other words, the connectedness of Russia related data is balanced. The fifty percent quantile displays a recurring pattern of connectedness and represents the average connectedness over the entire data period. Thus, it indicates that Russia related data is connected varying across time. It is visible that the Russia related data is highly correlated between 2011-2017 and between 2020-2022.

Net Directional Connectedness:

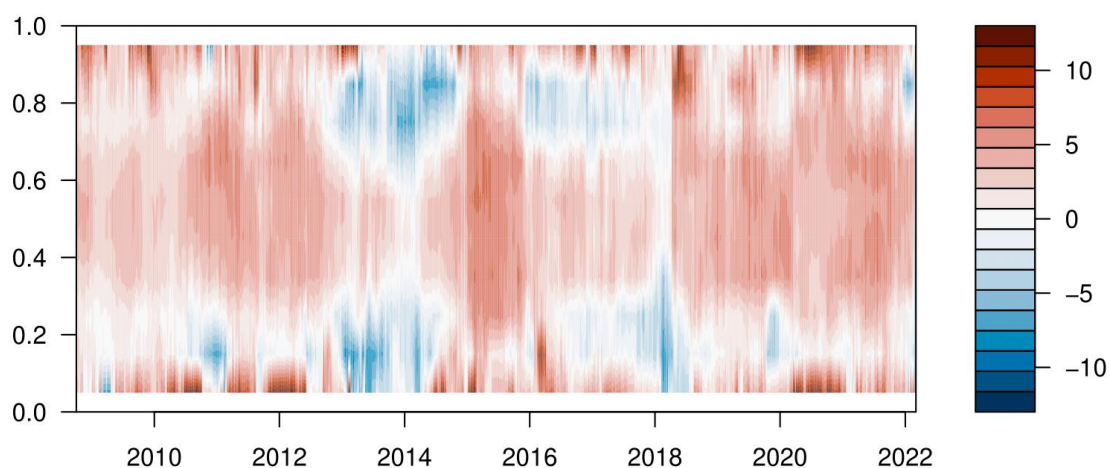


Graph 20: Net Total Directional Connectedness for the Ruble Based on the QVAR System

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

Net directional connectedness of ruble is represented in Graph 20. Ruble is seen to be a receiver across all times and quantiles.

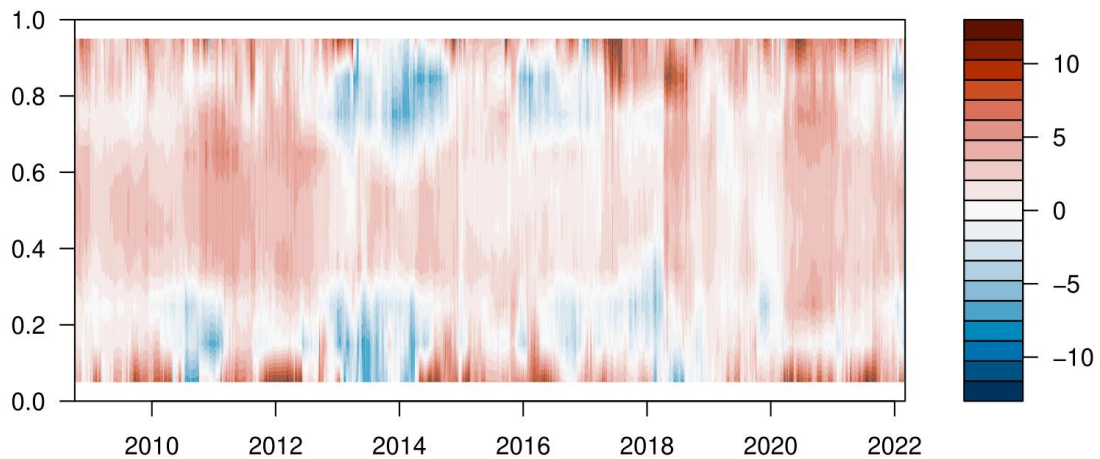


Graph 21: Net Total Directional Connectedness for the MSCIRs Based on QVAR System

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

Net directional connectedness of MSCIRs is represented in Graph 21. MSCIRs is seen to be a contributor across all times and quantiles.



Graph 22: Net Total Directional Connectedness for the BMI Based on the QVAR System.

Source: Created by the author

The heatmap is derived using a 10-variate forecast and a 200-day rolling window QVAR (1). The areas with warmer colors show a net contributor index, whereas those with cooler colors show a net receiving index.

Net directional connectedness of BMI is represented in Graph 22. BMI is seen to be a contributor across all times and quantiles.

4.2. Discussion

4.2.1. Oil Prices - Exchange Rate Relationship

Our findings indicate high correlation between oil prices and the Russian ruble, which aligns with the findings of some of the previous studies. Specifically, Lizardo and Mollick (2010) noted that when oil prices rise, the USD depreciates against oil exporter country currencies, and Wang et al. (2020) and Breen & Hu (2021) demonstrated that oil prices

are good indicators of exchange rate movements in oil-exporting countries. These studies align with our findings that oil prices is a good indicator of exchange rate on oil exporting countries. We see that Russian Ruble appreciates when oil prices rise and depreciates when oil prices fall.

However, we mentioned that we did not find any correlation between oil prices and the Turkish Lira, which is an oil importer country currency. This result differs from the findings of Tiwari et al. (2013), who revealed a correlation between oil movements and exchange rate fluctuations in Romania, an oil-producing but importing country, using wavelet-based models. It's worth noting that each country's specific economic dynamics, policy measures, and other factors can contribute to variations in the relationship between oil prices and exchange rates.

In summary, our results support the notion that there can be a correlation between oil prices and the exchange rates of oil-exporting countries, as evidenced by the negative correlation between oil prices and the Russian ruble. However, the lack of correlation with the Turkish Lira suggests that the relationship may not hold uniformly across all oil-importing countries, highlighting the importance of considering specific country contexts when analyzing the link between oil prices and exchange rates.

4.2.2. Oil Prices - Stock Market Relationship

Let's provide a more general comparison that encompasses all the studies mentioned, first let's list the studies that contradict our findings:

Kapusuzoglu (2011)'s study focused on the Istanbul Stock Exchange and discovered a long-term correlation between oil prices and stocks. However, there was no correlation observed between oil exporting and importing countries. Asteriou et al. (2013)'s study analyzed 31 countries and found a more significant correlation between oil prices and stock markets in oil-importing countries. These findings differ from our observation of no significant correlation between oil prices and the Turkish stock market.

Oskooe (2012)'s study on Iran, an oil-exporting country, found no volatility spillover between the Iranian stock market and oil prices. This contrasts with our findings for the Russian stock market, which indicate a positive correlation with oil prices.

Now, let's list studies that align with our findings:

Y. Wang et al. (2013)'s study using the VAR model demonstrated that the correlation between oil prices and stock markets depends on the nation's import/export status and the significance of oil to the national economy. The study indicated that stock markets in oil-exporting countries are more severely affected by aggregate demand uncertainty. Sim & Zhou (2015)'s study found that negative shocks had a higher influence on the US stock market compared to positive shocks. Narayan & Gupta (2015)'s study used a predictive regression model and a long-term dataset and concluded that oil price changes, both negative and positive, were significant predictors of US stock movements, with negative changes being more significant. These findings align with our observation of a positive correlation between oil prices and the Russian stock market.

Hashmi et al. (2021)'s study employing a quantile ARDL model found asymmetric effects in the short run between stock markets and oil prices in both oil-exporting and importing countries. Filis et al. (2011)'s study found a negative correlation between oil prices and stock markets in three importer and three exporter countries. These studies could not differentiate the impact of the status of the country being oil importing or exporting. But they do imply the importance of the countries economy's relation with oil. So, oil importing but highly oil dependent and developed country's stock market may be influenced by oil prices.

Overall, the studies collectively demonstrate that the correlation between oil prices and stock markets can vary across countries, time periods, and economic contexts. our findings of no significant correlation between oil prices and the Turkish stock market align with some of the studies and differs from some others. The positive correlation between oil prices and the Russian stock market differs from some studies and aligns with some studies. These differences in results may be because of various factors, used model in studies, observed country-specific conditions, economic dependencies, and the periods under examination.

4.2.3. Exchange Rate - Stock Market Relationship

Sensoy and Sobaci's study (2014) reveals that short-term volatility shocks create abrupt changes in the dynamic correlations between the Turkish Lira and BIST100 (the Turkish stock market). Narayan et al.'s study (2020) indicates that the stock market returns for the Japanese yen during the COVID-19 period were higher compared to the pre-COVID-19

period. Although this study focuses on a different currency (Japanese yen) and market (Japan), it highlights the increased exchange rate sensitivity of stock markets during crisis times. These findings align with our findings with Russian Ruble and the Turkish Lira, as we found that the absolute connectivity is higher after crises times.

Mun's study (2004) suggests that higher foreign exchange rate variability leads to higher local stock market volatility but lower US stock market volatility. Ahmed's study (2020) evaluates Egypt's monetary policies and finds a consistent long-term impact on the stock market, with the depreciation of the currency being more effective. These studies align with our findings that that Russian Ruble and the Turkish Lira are negatively correlated with their stock markets. This shows that depreciation causes price drops in stock markets and appreciation causes price rises.

Overall, our conclusions regarding the negative correlation between USD/TRY and USD/RUB and the respective stock markets align with the previous studies' findings. They support the notion that exchange rate fluctuations play a role in stock market movements and suggest that the local stock markets are more sensitive to negative changes in the currency compared to positive shocks. We can also say that exchange rate depreciation causes drop in stock markets.

4.2.4. The Triangle of Oil, Currency, and Stock Market

We have identified the exchange rate as a significant indicator across countries, regardless of their status as oil importers or exporters. Additionally, we found that oil prices play a more prominent role as an indicator for both the exchange rate and stock market in countries that are oil exporters.

Comparing our findings to the information from the previous academic studies, we can see some similarities and differences. Barunik et al. (2013) demonstrate an increasing correlation between oil, gold, and stock markets after the 2008 crisis, which aligns with our findings. Mensi et al. (2014, p. 16) study the BRICS countries and reveal correlations between their stock markets and global stock and commodity markets, including oil and gold. Raza et al. (2016, p. 300) show that gold prices have a positive effect on BRICS stock markets but a negative impact on small emerging economies, while oil prices have a negative impact on all emerging country stock markets. Singhal et al. (2019, p. 261)

focus on Mexico and demonstrate that gold affects the stock market positively, while oil has a negative impact, and the exchange rate is affected by oil in the long run. Adenekan et al. (2020) study Nigeria and reveal the interrelationships between oil, currency, and stock market performance. These studies align with our finding about Russia, a major oil exporting country.

Toparlı et al. (2019) focus on Türkiye and find significant time variation in the effects of variables on stock market returns, with real crude oil price shocks being less significant compared to exchange rate and interest rate shocks. Toparlı's study highly aligns with our findings about Türkiye.

Jain & Biswal (2016) examine the Indian Rupee, oil price, gold price, and Indian stock market, finding that falls in gold and crude oil prices affect the value of the Indian Rupee and the stock market. Bouri et al. (2017, p. 205) study India and find high co-integration between oil, gold, and the stock market. Tian et al. (2021, p. 16) analyze China and highlight the role of oil volatility as a major indicator of exchange rate and stock market volatilities. These three studies contradict our findings about Türkiye as China and India are also oil importing countries. But we may say that instead of making the differentiation as oil importing or exporting the distinction should be done as developed economies and emerging economies. Cause we can see that instead of the status the nation's economic oil dependency is what brings the correlation between these variables.

Overall, while there may be some variations in the findings, the previous studies and our conclusions align in recognizing the importance of exchange rates and the potential influence of oil prices on the stock market, particularly in oil-exporting countries.

4.2.5. Islamic Stocks - Conventional Stocks

The conclusions drawn from wavelet coherence estimations in our study indicate that exchange rate depreciation serves as a significant indicator for both Islamic and conventional stock markets, irrespective of a country's status as an oil importer or exporter. In contrast to prior research, the investigation by Hanif (2020) on Pakistan's stock markets, our findings suggest that exchange rate depreciation plays a more prominent role in oil importing country stock market dynamics.

Furthermore, our research indicates that oil prices exert a notable influence on both Islamic and conventional stock markets specifically in the case of countries classified as oil exporters, exemplified by our study's focus on Russia. This finding aligns with the general notion proposed by Hussin et al. (2012) on the Islamic stock market in Malaysia, which highlighted the positive co-integration between oil prices and Islamic stock market.

It is important to acknowledge that variations in methodologies, data sources, time periods, and specific contexts can contribute to divergent outcomes across studies. Therefore, it is recommended to further investigate and validate our conclusions using robust statistical methods and additional data to enhance the credibility and generalizability of the findings.

CONCLUSION

Network connectedness of the Turkiye related data set, at 50% quantile gives us the average picture of the connectivity. The average connectivity shows there is high connectivity till the COVID-19 pandemic. Which aligns with our hypothesis; “Lira’s exchange rate fluctuations have high connectivity with both Islamic and traditional stock market”. We can say that this null hypothesis could not be disproved.

Network connectedness of Russia related data set, at 50% quantile shows us there is high connectivity between Ruble and both stock markets. The connectivity seems to be positively effected by negative shocks like the COVID-19 pandemic, and the 2015 oil over supply price drop. These results align with our hypothesis; “Ruble’s exchange rate fluctuations have high connectivity with both Islamic and traditional stock market.” We can say that this null hypothesis could not be disproved.

As expected the results across countries for exchange rate were not different. Because exchange rate is not expected to be influenced by the countries status. And the movements of both Islamic and conventional stock market did not move different. As expected the stock markets behaved parallel. But it is visible that the connectivity in Russia related data is much more related to negative shocks, meanwhile in Turkiye related data the negative shocks seems to change the direction of the connectivity.

As the wavelet coherence doesn’t look across the data as quantiles but looks at different frequency relations pairwise, this gives us a better understanding of the relation of variables pairwise. And gives a better understanding of the relation time wise as it analyzes the data at different time frequencies. So, when looked at the wavelet coherence graphs, we can have these conclusions:

Turkiye’s currency exchange rate and traditional stocks are highly negatively correlated, none leading. This aligns with our hypothesis “Exchange rate fluctuations have a negative response on Turkiye’s traditional stock market”. Also, Islamic stocks are negative correlated but are not as correlated, and they are less affected by exchange rate movements, and none are leading. But even though it is not as correlated as traditional stock market, it is still correlated which aligns with our hypothesis; “Exchange rate fluctuations have a negative response on Turkiye’s Islamic stock market”.

There seems to be no correlation between oil prices and any Turkiye related variables. This disproves our hypotheses which were; “Oil prices have negative response on traditional stock in Turkiye.” And “Oil prices have negative response on Islamic stock in Turkiye.” We saw that oil prices have no significant effect on an oil importer country’s, Turkiye, stock markets, at all.

We also saw that the two Islamic stocks are highly correlated with none leading. But the correlation has been effected from the 2019 currency crises.

When we look at oil related correlations of Russia related data. We can see that oil prices have high correlation with all other variables between 2009-2012, also between 2015-2017, and in 2020. Oil is positively correlated with both stock markets, while on the other hand it is negatively correlated with ruble, and there is no significant leader. These results align with our hypotheses that were; “Oil prices have positive response on traditional stock market in Russia.” and “Oil prices have positive response on Islamic stock market in Russia.”

Ruble is highly negatively correlated, leading in many cases, with both Islamic and traditional stocks across all times and scales. There doesn't seem to be a major difference, they both get affected by exchange rate depreciation. This aligns with our hypothesis which are; “Exchange rate fluctuations have a negative response on Russia’s traditional stock market.” and “Exchange rate fluctuations have a negative response on Russia’s Islamic stock market.”. The correlation between BMI & MSCIRs is absolute and positive across all times and scales.

With all these in mind Turkiye as an oil importer country does not seem to be much affected by oil prices. On the other hand, having exchange rate depreciation seems to be directly correlated with the traditional stock market opposite of Islamic stock market. Which shows Islamic stock market is much more stable in Turkiye.

Russia as an oil exporter country, the oil prices seem to be highly correlated with other variables. The correlation seems to differ across time. Some major crises across the nation might have triggered the co-movement. Which is 2015 Russian Ruble fall, Syrian Civil War involvement, COVID-19. Oil prices seem to be more correlated during crisis times. We also see that Ruble is highly correlated with both stocks.

These conclusions show that exchange rate depreciation is a major indicator of both Islamic and conventional stock markets regardless of the country's status as an oil importer or exporter. But oil prices are an indicator of both Islamic and conventional stock markets if the country is an oil exporter.

If we look back at our hypotheses of this study;

“Oil prices relevant to a country’s oil-importing or exporting status have an opposite response on both Islamic and traditional stocks.” Our hypothesis has been denied because we found that there is no link whatsoever if the country is an importer.

“Exchange rate depreciation has a response on a country's both Islamic and traditional stocks.” Our hypothesis could not be disproved as the exchange rate depreciation is highly correlated in both countries and stocks.

Recommendations

Policy Recommendations

Policy Recommendations for Turkish policymakers:

Given the observed negative correlation between Turkiye's currency exchange rate depreciation and traditional stocks, it is imperative for policymakers to prioritize economic diversification. This entails reducing the country's reliance on foreign exchange rates by encouraging investments in sectors that are less susceptible to exchange rate fluctuations. By promoting diversification, the Turkish government can enhance economic stability and reduce vulnerability to external shocks.

Despite exhibiting a negative correlation with currency exchange rate depreciation, Islamic stocks appear to be relatively less affected compared to traditional stocks. Therefore, policymakers should devise strategies to foster the growth and development of the Islamic stock market. This can be achieved by implementing policies that attract more investors and provide a stable regulatory framework. By supporting the Islamic stock market, the government can bolster financial stability and contribute to a more resilient financial sector.

The findings suggest that the co-movement observed among variables after the 2013 Gezi Park Protests might have had an impact. To ensure a favorable investment climate and

attract both domestic and foreign investors, policymakers should address social and political unrest promptly. By fostering an environment of political stability, Turkiye can enhance investor confidence and create a conducive atmosphere for sustainable economic growth.

Policy Recommendations for Russian policymakers:

The high correlation observed between oil prices and other variables in Russia underscores the vulnerability of the economy to oil price fluctuations. Therefore, policymakers should prioritize efforts to diversify the economy away from its heavy reliance on oil. This can be achieved by channeling investments into non-oil sectors such as technology, manufacturing, and services. By diversifying the economy, Russia can reduce its exposure to oil price volatility and enhance economic stability.

The negative correlation between the ruble and both Islamic and traditional stocks highlight the importance of maintaining exchange rate stability. Policymakers should implement measures to foster a stable currency exchange rate, such as prudent monetary policies and effective exchange rate management. By ensuring exchange rate stability, the government can create a favorable environment for investment, attract foreign capital, and support economic growth.

The findings indicate that major crises, such as the 2015 Russian Ruble fall, Syrian Civil War involvement, and the COVID-19 pandemic, trigger co-movement among variables in Russia. To mitigate the adverse effects of such crises, policymakers should prioritize the development of comprehensive crisis management strategies and contingency plans. These should include measures to support businesses, protect investors, and maintain financial stability during turbulent times. By enhancing crisis preparedness, Russia can mitigate the negative impacts of crises on its economy.

Given the significant correlations observed between oil prices and various variables, including stock markets, policymakers should prioritize the strengthening of financial market regulation and supervision. This involves enhancing transparency, investor protection mechanisms, and risk management practices. By ensuring robust financial market regulation, the government can foster a stable and resilient financial sector that can withstand external shocks and contribute to long-term economic stability.

These policy recommendations aim to address the specific challenges and opportunities identified in the findings, and they emphasize the importance of economic diversification, exchange rate stability, crisis preparedness, and financial market regulation in promoting economic stability and resilience in both Turkiye and Russia.

Recommendations for Investors

Given the observed correlations between various variables, such as currency exchange rates, stock markets, and oil prices, it is crucial for investors to diversify their investment portfolios. By spreading investments across different asset classes, sectors, and countries, investors can reduce their exposure to specific risks and enhance portfolio resilience.

The findings suggest that Islamic stocks in Turkiye exhibit a relatively lower correlation with currency exchange rate depreciation compared to traditional stocks. Investors interested in the Turkish market may consider allocating a portion of their portfolio to Islamic stocks, as they may provide stability during periods of currency volatility.

For investors interested in Turkish stocks, it is important to closely monitor exchange rate movements, particularly for traditional stocks. The negative correlation between currency depreciation and traditional stocks implies that fluctuations in exchange rates can significantly impact their performance. Staying informed about currency trends can help investors make well-informed investment decisions.

Investors considering investments in Russian assets should pay close attention to oil price dynamics. The findings indicate a significant correlation between oil prices and various variables in Russia, including stock markets and the ruble. Understanding the factors influencing oil prices and monitoring their trends can provide valuable insights for making investment decisions related to Russian assets.

Investors should conduct thorough assessments of country-specific risks when considering investments in Turkiye and Russia. Factors such as political stability, social unrest, geopolitical tensions, and regulatory changes can have significant impacts on investment outcomes. In-depth research and analysis of these risks can help investors make informed decisions and manage their investment portfolios effectively.

These recommendations aim to provide guidance to investors based on the findings presented. It is important for investors to conduct thorough research, consider their risk

tolerance, and seek professional advice to make informed investment decisions aligned with their individual goals and circumstances.

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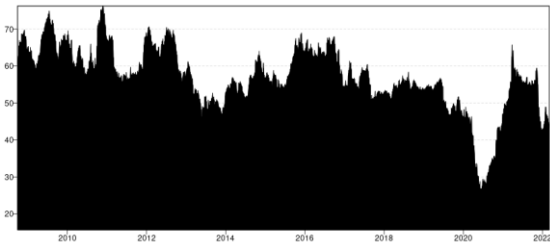
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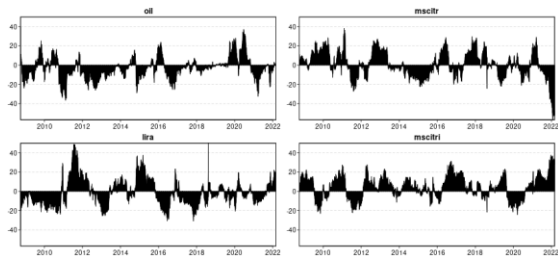
APPENDIX

Appendix 1: No Lag Network Connectedness Approach Results for Turkiye Related Analysis

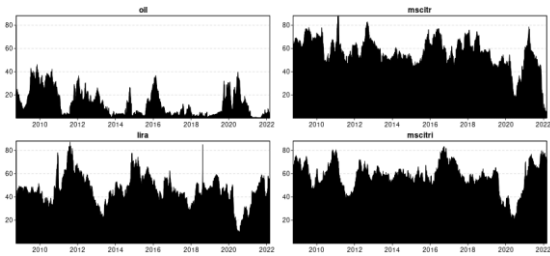
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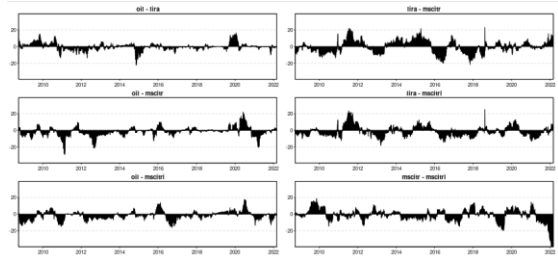
Net Total Directional Connectedness:



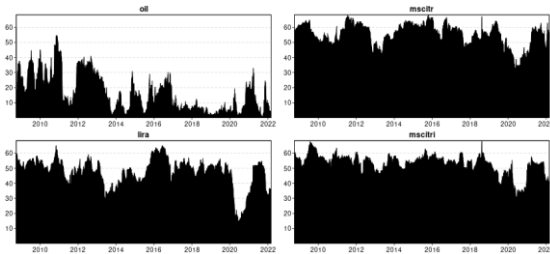
To Others:



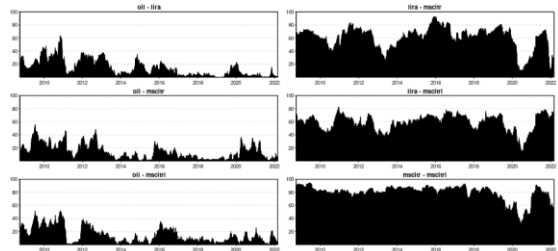
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From Others:

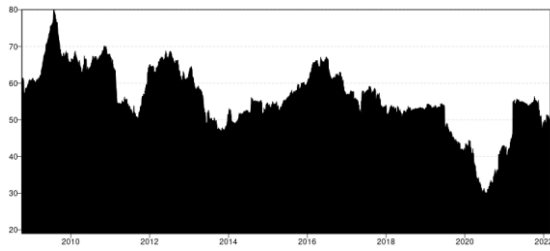


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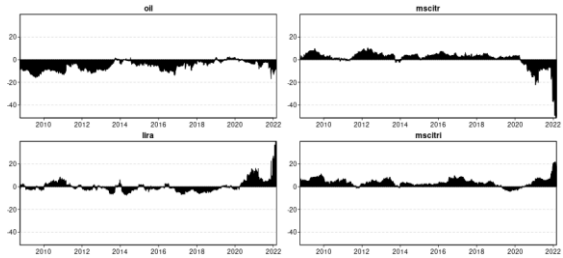


Appendix 2: 1-Lagged Network Connectedness Approach Results for Turkiye Related Data

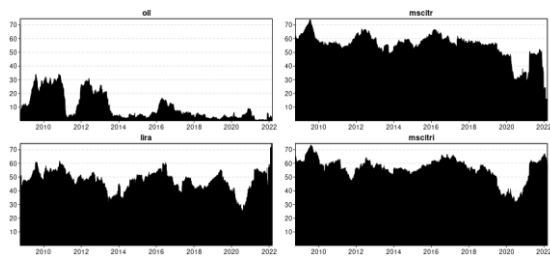
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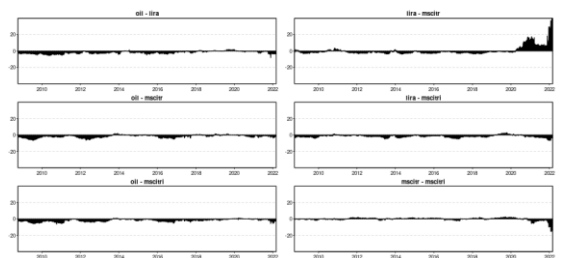
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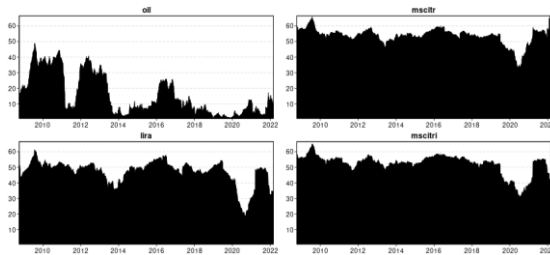
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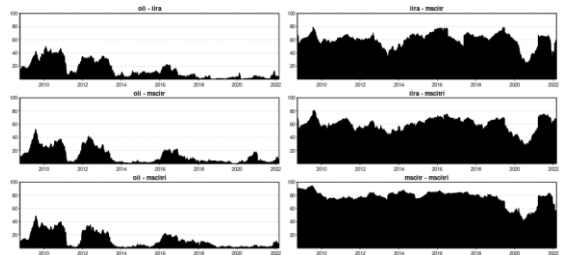
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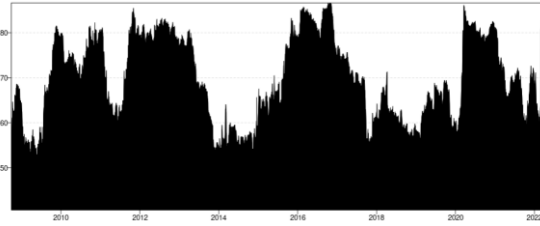


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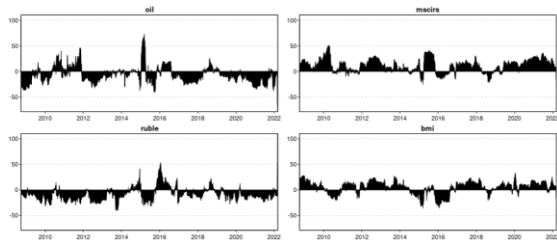


Appendix 3: No Lag Network Connectedness Approach Results for Russia Related Data

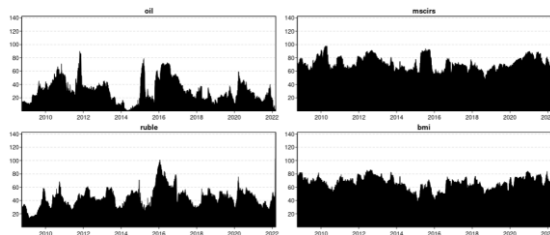
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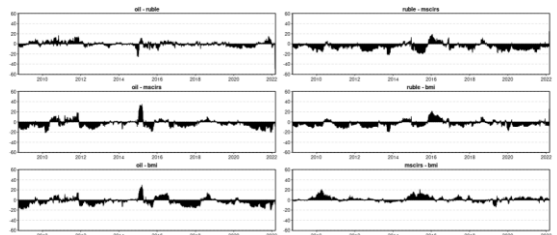
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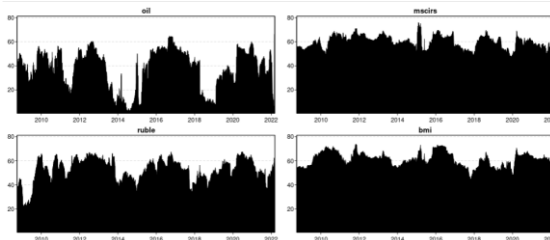
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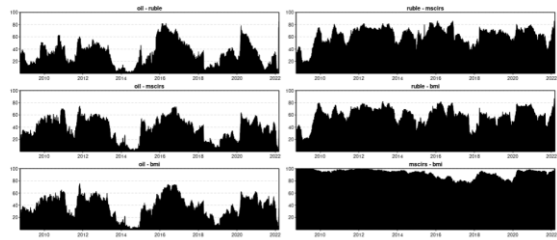
Net Pairwise Directional Connectedness:



From Others:

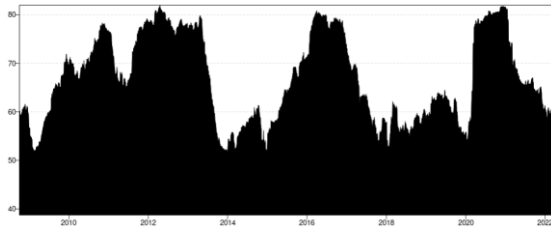


Dynamic Pairwise Connectedness:

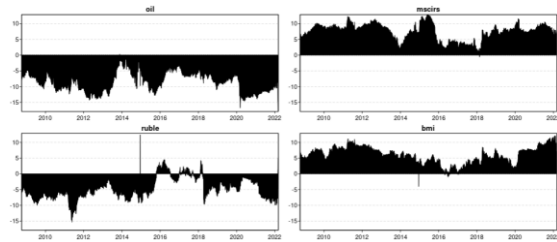


Appendix 4: 1-Lagged Network Connectedness Approach Results for Russia Related Data

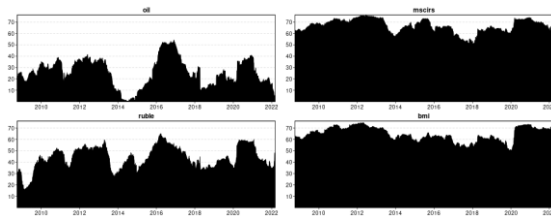
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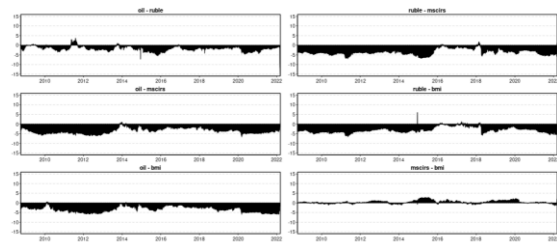
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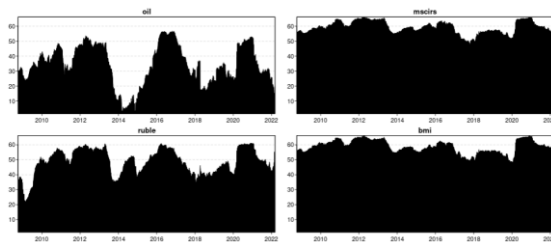
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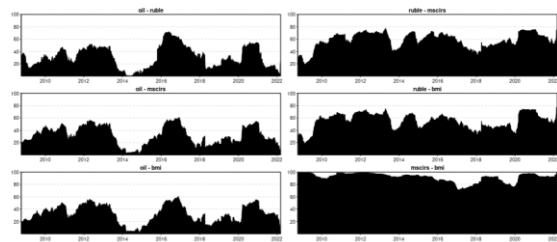
Net Pairwise Directional Connectedness:



From Others:



Dynamic Pairwise Connectedness:



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Education Information	
Undergraduate	
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Faculty	Faculty of Theology
Department	Theology
Articles and Papers	
1. Uysal, Ö. F. (2022). Geçmişten Günümüze Dünya’da İslami Rehin Dükkânları ve Uygulamaları. In <i>Banka Dışı İslami Finansal Kuruluşlar</i> (pp. 175–197). chapter, Orion Akademi.	