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**Geopolitical Risk
Empirical Analysis based on
LNG Export Price**

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*"Sono le scelte che facciamo, Harry,
che dimostrano quel che siamo veramente,
molto più che delle nostre capacità."*

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Introduction

The export of liquefied natural gas (LNG) represents a crucial and continuously evolving sector in the global economy. The LNG market is particularly complex, influenced by a wide range of economic, political, and social factors. This study arises from the need to understand the dynamics that determine the export price of LNG, with a particular focus on geopolitical risks and the diversity of exporters.

The primary objective of this thesis is to identify and analyze the key variables influencing the export price of LNG, and to determine whether geopolitical risk can be a significant explanatory factor.

Since 70% of the total LNG exports come from the top 10 global exporters and the remaining 30% from roughly African countries, a specific dataset was created for African countries. This approach allows for the observation of the main components determining the export price for countries belonging to the so-called "emerging markets".

For the understanding of Geopolitical Risk, this work include in the dataset several different indicator: the Geopolitical Risk Index (GPR) computed by Caldara and Iacoviello, based on the paper-sensitiveness, all off six World Governance Indicators (WGI) computed by the World Bank, and the Index of Economic Freedom calculated by the Heritage Foundation.

In the first chapter, a historical overview of the Liquefied Natural Gas market and an explanation of Geopolitical risk are provided. It is observed how LNG is becoming an increasingly utilized resource worldwide across various sectors, and how Geopolitical risk is becoming an extremely necessary variable for the study of new macroeconomic models due to the rise in global uncertainty and instability in recent years.

In the second chapter, the study methodology applied, Multivariate Linear Regression, is introduced. The variables included in the dataset and the three different Geopolitical Risk Indicators used in the model are subsequently examined. For all the different datasets, the trend of the LNG export price for each state will be observed, along with other particularly necessary variables such as the number of importers for each country.

Finally, in the third chapter, multivariate linear regressions are conducted, and the results of the different regressions are provided, highlighting the most significant variables and identifying the Countries where the regressions performed the best. Possible improvements for future research will also be indicated at the end.

Chapter 1

Background and Overview

1.1 Geopolitical Risk and the impact on International Trade

In recent years, a series of significant geopolitical events have unfolded, ranging from the Sino-US trade tensions to Brexit, the Russia-Ukraine conflict, and the simmering disputes between China and India. These occurrences, coupled with incidents such as the Nord Stream gas pipeline explosion stemming from the Russia-Ukraine war and the detonation of the Crimean bridge, have heightened global political tensions to new heights. These shocks have catalyzed a surge in nationalism and populism, injected uncertainty into the global political economy, and eroded the world's capacity to effectively respond to crises like the COVID-19 pandemic. Moreover, they have sparked fresh geopolitical frictions, exposing vulnerabilities in the international relations framework and precipitating a downturn in the global economy.

According to the World Economic Forum's annual Global Risks Report, geopolitical risks have consistently ranked among the top three global risks in terms of impact for five consecutive years. Failure to devise timely strategies to address these risks could undo years of progress in reducing poverty and inequality, further fracturing social cohesion and undermining cooperative relationships between nations (World Economic Forum, 2021).

A comprehensive survey of existing literature underscores geopolitics as an interdisciplinary field straddling geography, political economy, and international relations. However, despite extensive scholarly discourse, a universally accepted definition of geopolitics remains elusive. Broadly speaking, geopolitical risks encompass political (e.g., war, social unrest, religious conflicts), economic (e.g., trade friction, protectionism, anti-globalization), and natural (e.g., earthquakes, tsunamis, droughts) dimensions. Conversely, a narrower

interpretation restricts geopolitical risks to threats arising from military conflicts, terrorist acts, and international tensions, often categorized as part of policy uncertainty.

From 1.1, it can be observed how in March 2022, following the Russian invasion of Ukraine, the index reached one of the highest values in the last fifty years, comparable to the peaks of the Gulf and Iraq wars. By October 2023, the Gpr Index had surpassed the 200 mark, nearly two-thirds of the level reached in March 2022. The perception that over the past two years we have entered a historical phase characterized by high geopolitical risks is thus confirmed by the data.

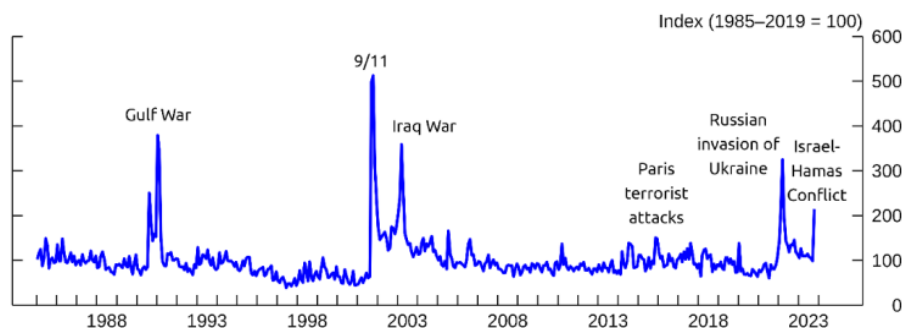


Figure 1.1: GPR Index from January 1985. Source: Dario Caldara and Matteo Iacoviello (2022), “Measuring Geopolitical Risk”, *American Economic Review*.

This divergence in definition carries significant implications for risk assessment and economic analysis. Nevertheless, there’s a broad consensus that both broad and narrow definitions of geopolitical risks exert adverse effects on the global economic landscape. According to the definition by [Yu and Wang, 2023], numerous scholars have highlighted the propensity of geopolitical risks to exacerbate instability in the international relations system, contributing to fluctuations in key macroeconomic indicators such as global oil prices, stock market performance, commodity prices, and policy uncertainties. These macroeconomic fluctuations and policy uncertainties, in turn, compound the risks confronting international economic activities. Furthermore, geopolitical risks act as barriers to international trade flows, imperiling the long-term stability and growth of industries such as banking, energy, insurance, and tourism on a global scale. From an investment perspective, Khattab¹ asserts that social risks within host countries and political

¹Khattab, A.; Anchor, J.; Davies, E. Managerial perceptions of political risk in international projects. 2007

threats from neighboring nations exert significant negative impacts on foreign investment. Similarly, Li and Vashchilko ² present evidence demonstrating that military conflicts diminish bilateral investment between high-income and low-income countries. Anh-Tuan and Thao ³ illustrate the critical role of geopolitical risk as a macro-level shock influencing corporate investment decisions. Caldara and Iacoviello ⁴ corroborate these findings by establishing a negative correlation between geopolitical risk and international capital flows.

1.2 LNG Market importance and background

Global natural gas consumption has been on a consistent rise in recent decades. Between 2000 and 2019, according to [Kari Liuhto, 2021], consumption surged by almost 60%, reaching over 3,900 billion cubic meters from 2,400 billion cubic meters. Despite this uptick, documented reserves of natural gas have also grown due to technological advancements and the discovery of new gas fields. Over the same period, documented reserves increased from 138,900 billion cubic meters to 198,800 billion cubic meters, with nearly half situated in the Russian Federation, Iran, and Qatar. Additionally, the proportion of natural gas in global primary energy consumption is expanding. Notably, consumption growth is most pronounced in the Middle East, Asia-Pacific, and Africa. Particularly noteworthy is the remarkable increase in global liquefied natural gas (LNG) exports, which soared from 140 to 485 billion cubic meters between 2000 and 2019, indicating more than a threefold rise, especially notable in the last five years ⁵. This expansion in LNG trade hinges on the proliferation of countries with infrastructure capable of both exporting and importing LNG. Furthermore, the liberalization of the global LNG market has led to an increase in its availability, with supply contracts becoming more flexible and shorter termed, indexed to gas hub prices, mirroring the evolution of the global oil trade.

The provision of liquefied natural gas plays a crucial role in bolstering the energy security of importing nations and enhancing the competitiveness of

²Li, Q.; Vashchilko, T. Dyadic military conflict, security alliances, and bilateral FDI flows. 2010

³Le, A.-T.; Tran, T.P. Does geopolitical risk matter for corporate investment? Evidence from emerging countries in Asia. 2021

⁴Board of Governors of the Federal Reserve System, Dario Caldara, Matteo Iacoviello. Measuring Geopolitical Risk. 2018

⁵Liuhto K. (2020, August 1). Natural gas in the Baltic Sea region: A special emphasis on liquefied natural gas (LNG).

their economies. The global LNG market is marked by intense competition among suppliers for end-users. Natural gas supplies have often been utilized as a tool of political leverage to achieve specific geopolitical aims ⁶. When examining the global expansion of LNG exports through a geoeconomic lens, three key points emerge:

- It's strategically vital for a nation to possess proven natural gas resources capable of supporting exports. As of the end of 2020, LNG was exported by 21 countries and imported by 42 countries ⁷.
- Individual exporting countries seek to carve out their own geoeconomic spheres, fostering cooperation or competition within the international system. This involves establishing natural gas transmission corridors via pipelines or shipping routes between export and import terminals.
- These geoeconomic endeavors by individual countries encroach upon the territories of other exporters, leading to direct competition for end-users. This competition influences the structure, flexibility, and pricing of LNG contracts, with maintaining a position of dependence on LNG supplies serving as a strategic tool to advance geopolitical objectives.⁸

The global LNG market dynamics are significantly influenced by geoeconomic factors, with two key elements shaping its trajectory.

- As early as 2018, there was a notable oversupply of natural gas worldwide, leading to a decline in gas prices across global trading platforms and hubs. In 2019, spot prices for LNG in the Asian market plummeted by 44% compared to the previous year ⁹.
- SARS-CoV-2 pandemic has had a profound impact on the global economy, causing a sharp decline in consumption across various sectors, particularly in the fuel industry. The International Energy Agency (IEA) estimates that global natural gas consumption dropped by three percent in 2020, equivalent to nearly 120 billion cubic meters. In this context, the global LNG trade has played a crucial role in maintaining flexibility in the natural gas markets, allowing them to adapt to sudden decreases in demand.

⁶Flint, C. (2012). Introduction to geopolitics. Routledge.

⁷International Energy Agency, Gas 2020

⁸Ruszel, M. (2019). Natural gas supplies as an instrument of geopolitical conflict between the Russian Federation and Ukraine. *Politykaenergetyczna – Energy Policy Journal*, 22(2), 33–46.

⁹International Energy Agency Gas 2020

In 2019, Qatar led the world as the largest exporter of liquefied natural gas, accounting for 22% of global exports, closely followed by Australia at 21%, the USA at 10%, the Russian Federation at 8%, and Malaysia at 7%. Remarkable growth in LNG exports was observed in the USA and the Russian Federation, both increasing their export volumes by over 60% compared to 2018. Argentina entered the LNG export market in 2019, while Gibraltar emerged as a new importer. Despite the COVID-19 pandemic in 2020, Australia maintained its position as the top global LNG exporter, experiencing only a marginal 0.8% reduction in exports compared to 2019. Australia, Qatar, and the USA collectively represented over half of global LNG exports in 2020. When evaluating energy security from the standpoint of LNG exporters, having diverse gas importers is crucial. In this regard, the USA holds a strong position, supplying LNG to 32 countries, while Qatar serves 24 countries as of 2019. Australia primarily sells its LNG to 10 countries, with China and Japan accounting for nearly 75% of its exports ¹⁰.

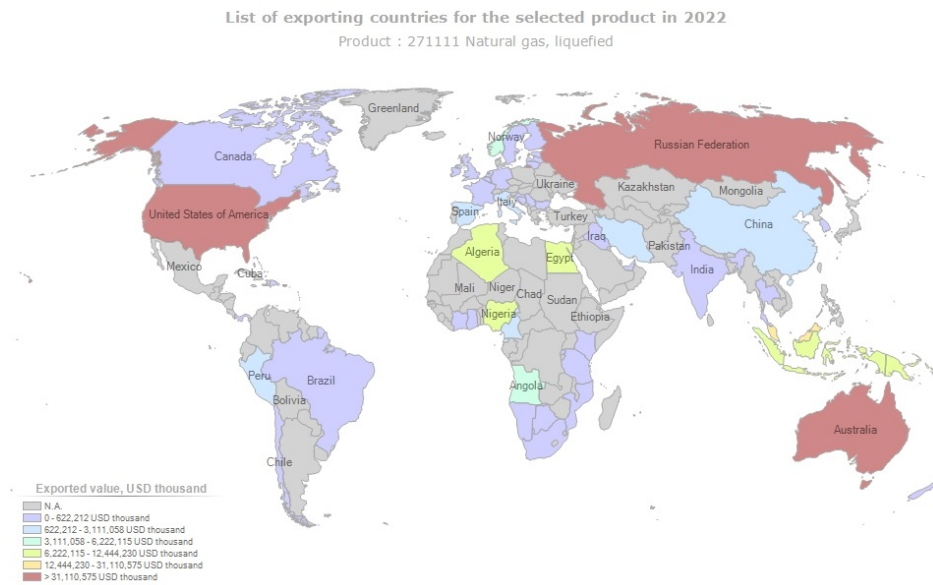


Figure 1.2: Main LNG countries exporter in 2022.

Source: trademap.org

It appears that 2021 and the subsequent years will witness a heightened geoeconomic rivalry between the USA and the Russian Federation. With the adeptness of US diplomacy in securing contracts with the largest number of LNG importers globally (32 countries in 2019), these nations are regarded

¹⁰International Energy Agency Gas 2020

as "American bridgeheads". Any increase in the volume of American LNG supplies to these 32 countries could curtail the Russian Federation's position as a natural gas supplier. Concurrently, this trend is invigorating the burgeoning exports of LNG from pro-American nations like Qatar, Australia, and Canada, which are gearing up to commence their LNG exports.

Furthermore, ongoing international competition in the LNG market has led to a decline in LNG re-exports. Analysis of the period 2018–2019 indicates a nearly 60% decrease, with Europe accounting for the largest volume of re-exported LNG (58% of global re-exports), primarily to Asia. France (39% of global re-exports), Singapore (26%), the Netherlands (9%), and Belgium (8%) emerged as the leading re-exporters in 2019, with the People's Republic of China being the largest recipient (32%)¹¹. These trends suggest a reduction in commercial transactions involving intermediaries registered in Europe within the current landscape of the global LNG market.

Moreover, countries employing a strategy of diversifying their LNG customer base are poised to dominate the market compared to those relying on regional supplies. In 2006, the primary LNG producers were Qatar, Malaysia, Indonesia, Algeria, Nigeria, Trinidad and Tobago, Egypt, and Oman. Except for Qatar, which has maintained its position, these countries exported LNG to regional markets due to the high cost of ocean freight, leading to regionalization. However, maritime transport cost reductions and the expansion of LNG terminals have altered the landscape of primary suppliers. By 2025, China is projected to account for 22% of total LNG demand and contribute approximately 40% of the total growth in imports. Lastly, policy decisions by importers will play a crucial role in shaping the market and influencing competition among exporters. Presently, the largest LNG consumers globally are countries located in the Asia Pacific and Asia regions, including Japan (22% of global imports), the People's Republic of China (17%), and South Korea (11%).

1.3 Objective of Research

The main objective of this thesis was to examine the impact of geopolitical risk on the export price of Liquefied Natural Gas (LNG), with a special focus on African Countries.

The choice to investigate this topic stemmed from the desire to understand whether and to what extent the unstable political context of many African countries might influence the export price of LNG, and compared it, with

¹¹International Energy Agency, Global Gas Security Review 2020

other countries that export the same commodity. This commodity was selected after careful analysis revealed its growing importance in global exports and its significant increase in recent years. Figure 1.4 reveals the high African Countries presence in the Top 20 World exporter from the beginning of XXI century.

On average, it can be observed in Figure 1.3 and in Table 1.1 that between 15% and 20% of the total annual global exports of Liquefied Natural Gas (LNG) are accounted for by African exporters. This indicates a substantial presence of African nations in the international LNG market, highlighting the continent’s significant role as a supplier of this crucial energy resource. Despite facing various challenges, such as political instability and infrastructural limitations, African countries have managed to carve out a notable share in the LNG export market, contributing to the diversification of global energy sources and the expansion of trade networks. This underscores the importance of examining the impact of geopolitical risk on LNG export prices in the African context, considering the region’s substantial contribution to the global LNG trade.

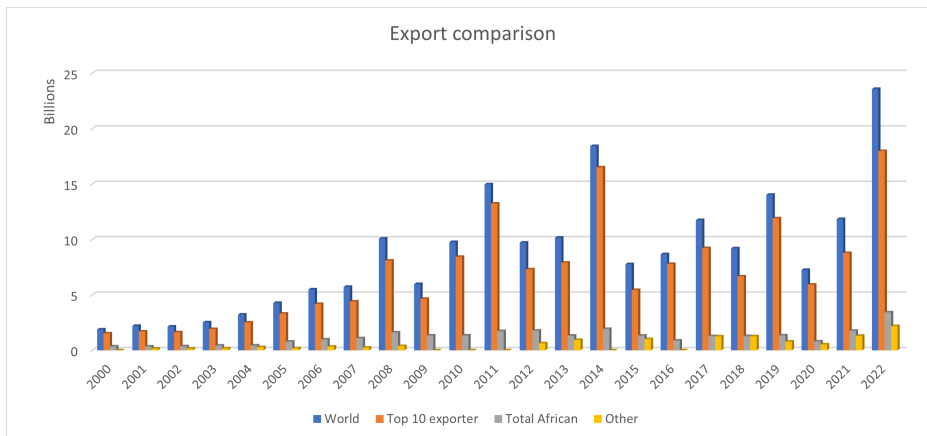


Figure 1.3: Annual LNG total export value; Comparison.

Source: trademap.org

One of the initial challenges was to identify an effective way to measure geopolitical risk for each country, considering the scarcity of specific indices available in the academic sphere, is a variable that is increasingly being investigated by Rating Agencies and macroeconomic studies. To address this gap, three different indices were used: the method proposed by Caldara and Iacoviello, the indicators from the World Governance Indicator, and the Heritage Index that we discuss in Section 2.4. This plurality of approaches

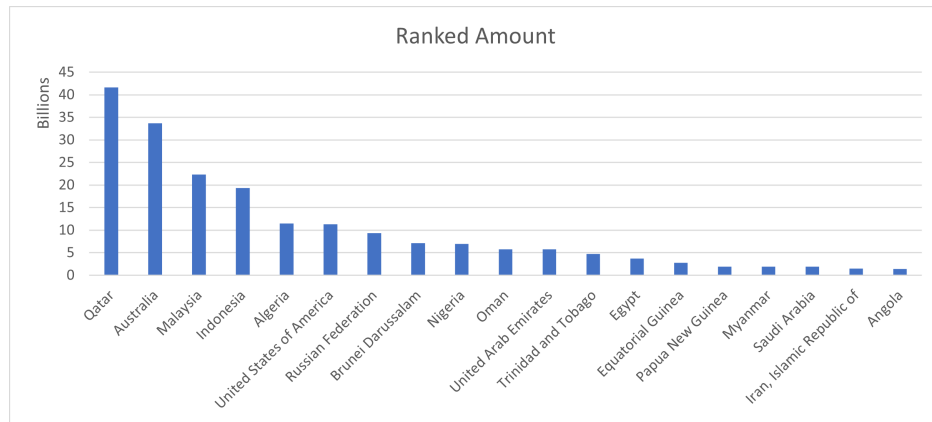


Figure 1.4: Cumulative export amount from 2000 to 2022; Comparison.
Source: trademap.org

allowed for a more comprehensive and nuanced view of geopolitical risk, enabling a deeper analysis of its effects on the export price of LNG.

The fundamental research question guiding this study was:

”Can a geopolitical risk indicator be predictive of the export price of a commodity, and if so, how much can it influence it compared to traditional macroeconomic variables?”.

This question provided the theoretical framework to explore the complex relationship between political factors and economic dynamics, with the aim of providing greater insights into the functioning of commodity markets in unstable geopolitical contexts.

CHAPTER 1. BACKGROUND AND OVERVIEW

Years	Top 10 Exporter	African Export	other countries
2000	81.21%	18.78%	0%
2001	77.25%	15.87%	6.87%
2002	75.98%	16.96%	7.05%
2003	75.95%	16.91%	7.12%
2004	77.98%	13.38%	8.63%
2005	77.37%	18.26%	4.36%
2006	76.14%	17.80%	6.05%
2007	76.89%	18.97%	4.13%
2008	80.28%	15.93%	3.77%
2009	77.64%	22.35%	0%
2010	86.29%	13.70%	0%
2011	88.43%	11.56%	0%
2012	75.16%	18.34%	6.48%
2013	77.77%	13.02%	9.19%
2014	89.55%	10.44%	0%
2015	70.00%	17.09%	12.89%
2016	89.84%	10.15%	0%
2017	78.47%	10.87%	10.65%
2018	72.41%	13.88%	13.70%
2019	84.89%	9.56%	5.54%
2020	81.70%	11.01%	7.28%
2021	74.12%	14.84%	11.02%
2022	76.21%	14.52%	9.25%

Table 1.1: Annual LNG total export value; percentage distribution.
Data source: trademap.org

1.4 Structure of Thesis

The second chapter of the thesis is structured into four key sections detailing the methodology employed for analyzing geopolitical risk and its impact on the export price of Liquefied Natural Gas (LNG). The first section provides a comprehensive overview of the methodology used, based on the application of Ordinary Least Squares (OLS) regression model to examine the relationship between the variables of interest. The reasons behind this methodological choice and the approaches taken to ensure the reliability and validity of the results obtained will be elucidated.

Subsequently, in the second section, an analysis of variables closely related to LNG will be conducted; including the export price of each country (dependent variable of OLS), export volume, and the number of importers per country over time. This section will enable an understanding of the evolution of these variables and their impact on the global LNG market. The third section of the second chapter will introduce the macroeconomic variables considered in the model, contributing to a more comprehensive and nuanced understanding of the context in which geopolitical risk operates. These variables will be analyzed and discussed in the context of their relationship with the export price of LNG.

In assessing the multifaceted landscape of geopolitical risk (GPR) in the last paragraph of second chapter, three prominent indices have been used: the **Caldara&Iacoviello Index**, the six **World Governance Indicator (WGI) Index**, and the **Heritage Foundation Index**. The Caldara & Iacoviello Index, developed by Dario Caldara and Matteo Iacoviello, provides a comprehensive measure of geopolitical risk by incorporating a range of factors such as political instability, conflict, and regulatory uncertainty. In contrast, the WGI Index, developed by the World Bank, evaluates the quality of governance in countries worldwide, offering insights into political stability, institutional effectiveness, and levels of corruption. Additionally, the Heritage Foundation Index, also known as the Index of Economic Freedom, assesses the economic environment of countries based on factors such as property rights, government integrity, and regulatory efficiency. While each index offers a unique perspective on geopolitical risk, collectively, they provide a more holistic understanding of the complexities inherent in assessing and managing geopolitical risk in an increasingly interconnected world.

Finally, the third chapter addresses the results obtained from multivariate linear regression. As a convention, the dataset has been divided into three sub-datasets, as shown in Table 1.2 : dataset of *African Export Countries*,

CHAPTER 1. BACKGROUND AND OVERVIEW

dataset of *Top 10 World LNG Exporter*, and dataset of *Other countries*, usefull for OLS with "Caldara & Iacoviello GPR Index". The chapter delves into the results of the different linear regressions for each dataset, identifying the most significant variables for the model and determining which model is most efficient. The thesis aims to serve as a starting point for a recent academic topic and suggests potential avenues for future research to further develop the field.

African Countries	Top 10 LNG World Exporter	Other Countries
Algeria	Oman	Norway
Botswana	United Arab Emirates	Italy
Cameroon	Brunei Darussalam	Spain
Egypt	United States of America	China
Equatorial Guinea	Trinidad and Tobago	Belgium
Ghana	Qatar	Perù
Kenya	Malaysia	
Libya	Indonesia	
Mozambique	Russia	
Namibia	Australia	
Nigeria		
Rwanda		
South Africa		
Sudan		
Tanzania		
Tunisia		
Uganda		
Zambia		

Table 1.2: Countries included in the dataset

Chapter 2

Theoretically Foundation and Methodology

2.1 Research Methodology

2.1.1 Ordinary Least Squares (OLS)

Simple linear regression, noting the [James Gareth, 2013], lives up to its name: it is a very straightforward approach for predicting a quantitative response Y on the basis of a single predictor variable X . It assumes that there is approximately a linear relationship between X and Y . Mathematically, we can write this linear relationship as:

$$Y \simeq \beta_0 + \beta_1 X \quad (2.1)$$

In Equation (2.1), β_0 and β_1 are two unknown constants that represent the intercept and slope terms in the linear model. Together, β_0 and β_1 are known as the model coefficients or parameters. In the following equation we use *hat* simple $\hat{\cdot}$ to denote the estimated value for an unknown parameter or coefficient, or to denote the predicted value of the response.

$$\hat{y} = \hat{\beta}_0 + \hat{\beta}_1 x \quad (2.2)$$

where \hat{y} indicates a prediction of Y on the basis of $X = x$. In practice, β_0 and β_1 are unknown. So before we can use (2.1) to make predictions, we must use data to estimate the coefficients. Let

$$(x_1, y_1), (x_2, y_2), \dots, (x_n, y_n)$$

represent n observation pairs, each of which consists of a measurement of X and a measurement of Y . Our goal is to obtain coefficient estimates $\hat{\beta}_0$ and

CHAPTER 2. THEORETICALLY FOUNDATION AND METHODOLOGY

$\hat{\beta}_1$ such that the linear model (2.1) fits the available data well—that is, so that $y_i \simeq \hat{\beta}_0 + \hat{\beta}_1 x_i$ for $i = 1, \dots, n$. Let $\hat{y}_i = \hat{\beta}_0 + \hat{\beta}_1 x_i$ be the prediction for Y based on the i th value of X . Then $e_i = y_i - \hat{y}_i$ represent the i -th residual. We define the *residual sum of Squares* (RSS) as:

$$RSS = e_1^2 + e_2^2 + \dots + e_n^2$$

or equivalent as:

$$RSS = (y_1 - \hat{\beta}_0 - \hat{\beta}_1 x_1)^2 + (y_2 - \hat{\beta}_0 - \hat{\beta}_1 x_2)^2 + \dots + (y_n - \hat{\beta}_0 - \hat{\beta}_1 x_n)^2 \quad (2.3)$$

The least squares approach chooses $\hat{\beta}_0$ and $\hat{\beta}_1$ to minimize the RSS. Using some calculus, one can show that the minimizer are:

$$\begin{aligned} \hat{\beta}_1 &= \frac{\sum_{i=1}^n (x_i - \bar{x})(y_i - \bar{y})}{\sum_{i=1}^n (x_i - \bar{x})^2}, \\ \hat{\beta}_0 &= \bar{y} - \hat{\beta}_1 \bar{x} \end{aligned} \quad (2.4)$$

where $\bar{y} \equiv \frac{1}{n} \sum_{i=1}^n y_i$ and $\bar{x} \equiv \frac{1}{n} \sum_{i=1}^n x_i$ are the sample means. In other words, (2.4) defines the least squares coefficient estimates for simple linear regression.

Assuming the true relationship between X and Y takes the form $Y = f(X) + \epsilon$ for some unknown function f , where ϵ is a mean-zero random error term. If f is to be approximated by a linear function, then we can write this relationship as:

$$Y = \beta_0 + \beta_1 X + \epsilon \quad (2.5)$$

Here β_0 is the intercept term—that is, the expected value of Y when $X = 0$, and β_1 is the slope—the average increase in Y associated with a one-unit increase in X . The error term is a catch-all for what we miss with this simple model: the true relationship is probably not linear, there may be other variables that cause variation in Y , and there may be measurement error. We typically assume that the error term is independent of X . The model given by (2.5) defines the *population regression line*, which is the best linear approximation to the true relationship between X and Y . The least squares regression coefficient estimates (2.4) characterize the *least squares line* (2.2).

Instead of fitting a separate simple linear regression model for each predictor, a better approach is to extend the simple linear regression model (2.5) so that it can directly accommodate multiple predictors. We can do this by giving each predictor a separate slope coefficient in a single model. In general,

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suppose that we have n distinct predictors. Then the **Multiple Linear Regression** model takes the form

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon \quad (2.6)$$

where X_j represent the j th predictor and β_j quantifies the association between that variable and the response. We interpret β_j as the average effect on Y of a one unit increase in X_j , holding all other predictors fixed.

As was the case in the simple linear regression setting, the regression coefficient $\beta_0, \beta_1, \dots, \beta_n$ in (2.6) are unknown, and must be estimated. Given estimates $\hat{\beta}_0, \hat{\beta}_1, \dots, \hat{\beta}_n$, we can make predictions using the formula

$$\hat{y} = \hat{\beta}_0 + \hat{\beta}_1 x_1 + \hat{\beta}_2 x_2 + \dots + \hat{\beta}_n x_n \quad (2.7)$$

The parameters are estimated using the same least squares approach that we saw in the context of simple linear regression. We choose $\beta_0, \beta_1, \dots, \beta_n$ to minimize the sum of squared residuals

$$RSS = \sum_{i=1}^n (y_i - \hat{y}_i)^2 = \sum_{i=1}^n (y_i - \hat{\beta}_0 - \hat{\beta}_1 x_{i1} - \hat{\beta}_2 x_{i2} - \dots - \hat{\beta}_n x_{in})^2 \quad (2.8)$$

The values $\hat{\beta}_0, \hat{\beta}_1, \dots, \hat{\beta}_n$ that minimize (2.8) are the multiple least squares regression coefficient estimates.

2.1.2 Data Selection and Application

In Table 2.1, a comprehensive listing of variables employed in the multivariate linear regression model is provided. Each variable included in the model represents a crucial aspect considered in the analysis, aiming to capture the multifaceted dynamics influencing the phenomenon under investigation. These variables encompass a spectrum of factors spanning from macroeconomics indicators, LNG price related variable to three Geopolitical Risk Indexes subsequently explained in the following section 2.4: six **World Governance Indicator**, Geopolitical Index developed by **Caldara and Iacoviello** and the Index of Ecomic Freedom developed by **Heritage Foundation**.

In order to fitting the various Multivariate Linear Regression, it has been used the MATLAB command '**fitlm**'. Here's a breakdown of its functionality:

- **Input Parameters:**

- Predictor variable (**X**): These are the **independent variables** in dataset that influence the dependent variable.
- Response variable (**Y**): This is the **dependent variable** you are trying to predict based on the predictor variables. In our case is the **LNG price**. The goal is to assess the following equation:

$$\text{LNG price} = \beta_0 + \beta_1 \times \text{GDP PC} + \beta_2 \times \text{PCOE} + \beta_3 \times \text{CPI} + \dots + \beta_8 \times \text{HER}$$

- **Model Fitting:** The function fits a linear regression model to the data provided. This means it finds the coefficients for each predictor variable that minimizes the sum of the squared differences between the predicted values and the actual values of the response variable.
- **Output:** The function returns a linear regression model object that contains various properties and methods for analyzing the fitted model.

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Index of Variable	
GNL	Liquefied Natural Gas Price - HS6: 271111
GDP PC	Gross Domestic Product per Capita
PCOE	Product Concentration Index on Export
CPI	Consumer Price Index
ER	Exchange Rate
VOL	Volume of Export of GNL
N. IMP	Number of Importer which import more than 1% of total export
GPR C&I	Geopolitical Risk Index by Caldara e Iacoviello
WGI v1	World Governance Indicator - Political Stability and Absence of Violence/Terrorism
WGI v2	World Governance Indicator - Voice and Accountability
WGI v3	World Governance Indicator - Government Effectiveness
WGI v4	World Governance Indicator - Regulatory Quality
WGI v5	World Governance Indicator - Rule of Law
WGI v6	World Governance Indicator - Control of Corruption
HER	Heritage - Index of Economic Freedom

Table 2.1: Variable Description

2.2 LNG and related variable

This section presents the dependent variable Y , i.e. the LNG Export Price in 2.2.1 and two independents variables, closely related to the LNG commodity; the Export Volume in 2.2.2 and the Number of Importer for each exporting Country in 2.2.3. Will be explained the data sources, time series and some techniques applied for the creation and cleaning of dataset.

2.2.1 LNG country export price

This variable represents the annual total value in dollars of Liquefied Natural Gas (LNG) exported by each nation, present in the created dataset. This is the most important variable considered in the thesis because, as previously stated, it is the dependent variable Y .

The main data sources for building the dataset were:

- **UN Comtrate**; The United Nations Comtrade database that aggregates detailed global annual and monthly trade statistics by product and trading partner for use by governments, academia, research institutes, and enterprises. Data compiled by the United Nations Statistics Division covers approximately 200 countries and represents more than 99% of the world's merchandise trade.
- **Trade Map**; by International Trade Center, the joint agency of the United Nations and the World Trade Organization, fully dedicated to supporting small businesses of developing countries to trade.

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It is important to specify that some data were not available, and for simplicity in creating the dataset, they were estimated using **Linear Interpolation method**.

The formula for linear interpolation formula is given by:

$$y = y_1 + (x - x_1) \frac{(y_2 - y_1)}{(x_2 - x_1)} \quad (2.9)$$

where;

- x_1 and y_1 are the first coordinates.
- x_2 and y_2 are the second coordinates.
- x is the point to perform the interpolation.
- y is the interpolated value.

Table 2.2 presents a comprehensive list of various exporting countries divided by sub-dataset. For each country, are showed the average export value for the available time horizon and the maximum exported value present in the dataset. Furthermore, the table shows the time horizon for each country and the historically export trend.

In the table, in the second column for each dataset, countries that, on average, have a greater average value of LNG export, are highlighted with a darker shade of red. In the sixth column, attention is paid to countries for which it has been possible to create a shorter time horizon.

As mentioned in Paragraph 1.2, it can be observed in Figure 2.1 how Qatar has been the leader in LNG exports until 2019 (last available data update), followed by Australia, Russia, USA and Malaysia.

Regarding African exporting countries, it's important to note that in Figure 2.3:

- **Algeria** [EIA,] ranks among the leading African LNG exporters, primarily shipping its LNG to Europe ¹. Currently, Algeria operates four LNG terminals, all of which are owned and managed by Sonatrach ². In February 2022, Sonatrach inked a deal with Sinopec to enhance and modernize the Skikda LNG terminal, aiming to boost its storage capacity and upgrade its port facilities to handle larger vessels ³.

¹See medium-term and long-term contracts in force for 2021 in the International Group of Liquefied Natural Gas Importers (GIIGNL), 2022 Annual Report

²International Group of Liquefied Natural Gas Importers (GIIGNL), 2022 Annual Report

³Sanja Pekic, "Sonatrach and Sinopec sign Skikda LNG storage tank deal"

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- **Nigeria** holds the largest natural gas reserves on the continent and, according to BP's estimates in its June 2022 Statistical Review of World Energy, it was ranked sixth globally among exporters of liquefied natural gas in 2021. Both infrastructure and demand constraints are challenges to exporting significant natural gas volumes by pipeline to neighboring countries.
- **Egypt** primarily exports its natural gas as LNG, although in 2018, it began exporting natural gas to Jordan via the AGP. Historically Egypt has been a net exporter of natural gas, but in the mid-2010s, Egypt had to import natural gas to meet increasing domestic consumption. Egypt's total natural gas exports have steadily increased since 2016, after some of its recent natural gas discoveries began producing, which created a surplus of natural gas for the country to export. Egypt's natural gas imports declined to nearly zero by 2019 after reaching a record high of 294 Bcf in 2016; Egypt exported about 177 Bcf in 2019⁴.

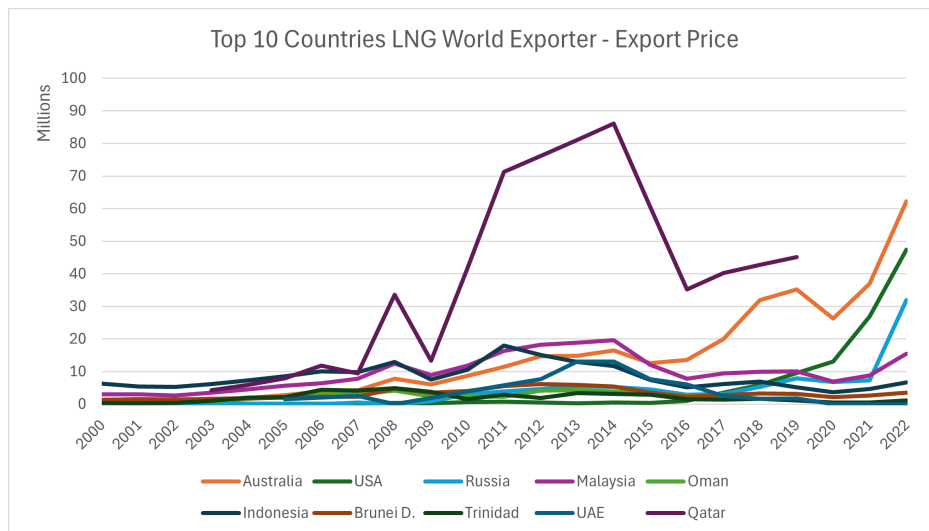


Figure 2.1: Historically Export Price of Top 10 World Exporter.
Source: UN Comtrade

⁴U.S. Energy Information Administration. International Energy Statistics database

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	Average	Max	Beginning	End	time horizon	trend
Australia	14'660'728	62'221'151	2000	2022	22	
USA	4'898'491	47'331'669	2000	2022	22	
Russia	4'450'156	31'968'534	2002	2022	20	
Malaysia	9'699'016	19'647'559	2000	2022	22	
Oman	2'572'098	4'298'676	2000	2017	17	
Indonesia	8'397'911	17'972'740	2000	2022	22	
Brunei D.	3'146'745	6'176'425	2000	2022	22	
Trinidad	2'041'728	4'880'325	2000	2022	22	
UAE	3'942'228	13'016'100	2005	2022	17	
Qatar	39'199'468	86'040'000	2003	2019	16	
Algeria	4'988'034	8'298'326	2000	2022	22	
Nigeria	2'747'667	8'751'197	2000	2022	22	
Egypt	1'827'475	10'065'841	2003	2022	19	
Eq. Guinea	1'113'551	3'067'240	2004	2022	18	
Angola	2'110'869	6'080'728	2017	2022	5	
Libya	650'686	1'489'660	2007	2019	12	
Cameroon	130'205	1'861'736	2000	2022	22	
Mozambique	119'753	272'265	2003	2022	19	
Tanzania	18'191	298'691	2004	2022	18	
South Afr.	4'694	15'814	2000	2022	22	
Sudan	5'996	15'539	2001	2018	17	
Kenya	257	903	2001	2022	21	
Namibia	175	476	2000	2022	22	
Ghana	128	1'336	2003	2022	19	
Botswana	77	252	2000	2022	22	
Rwanda	29	50	2011	2022	11	
Zambia	15	118	2004	2020	16	
Tunisia	15	116	2000	2017	17	
Uganda	9	29	2002	2017	15	
Norway	798'508	3'341'494	2000	2022	22	
Perù	598'971	3'087'635	2000	2022	22	
Spain	392'799	2'591'685	2002	2022	20	
China	50'726	1'114'895	2000	2022	22	
Italy	129'097	787'121	2000	2022	22	
Belgium	161'671	781'193	2002	2022	20	

Figure 2.2: Export Price comparison with time horizon
Source: trademap.org

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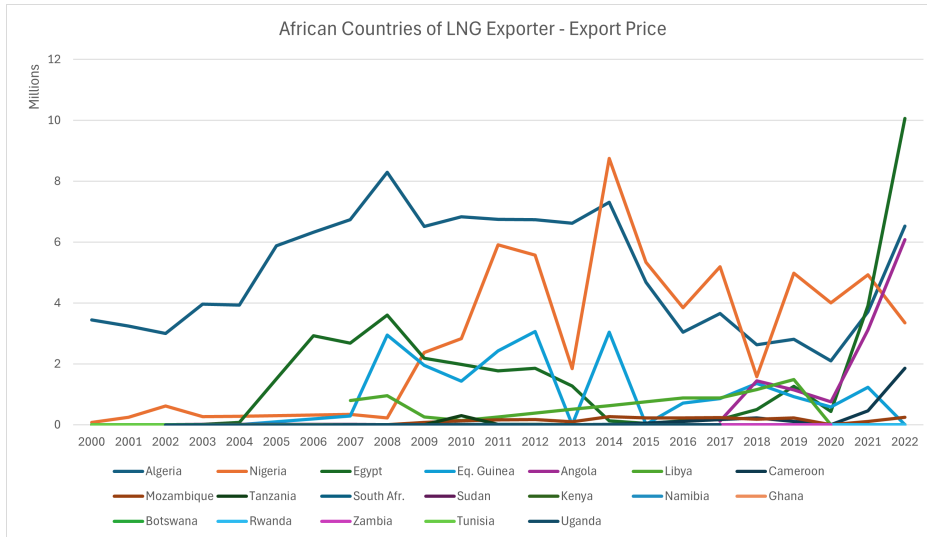


Figure 2.3: Historically Export Price of African Country Dataset.
Source: UN Comtrade

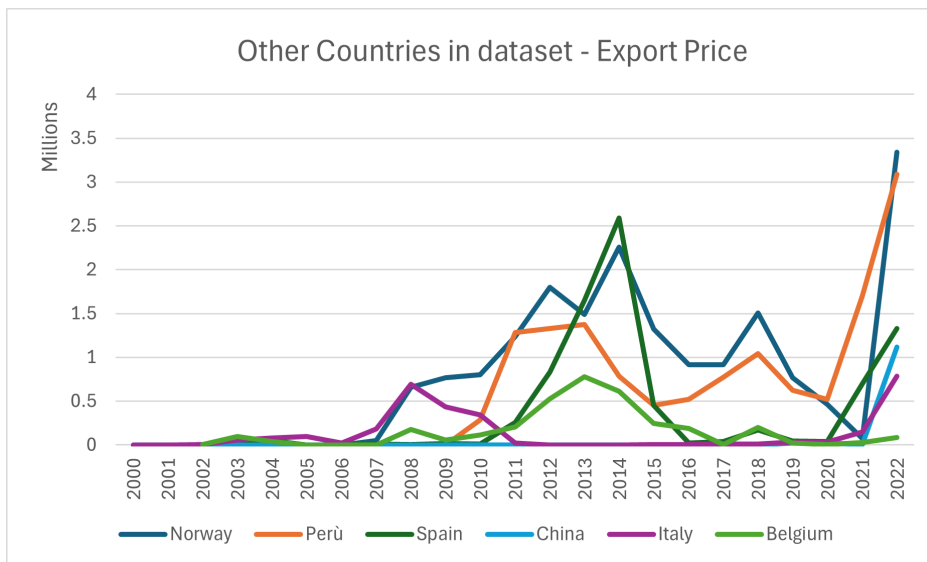


Figure 2.4: Historically Export Price of Other Countries in Dataset.
Source: UN Comtrade

2.2.2 Country Export Volume

In Figure 2.5 is possible to observe the comparison of Historical export volume of Top 10 world exporter, while, in Figure 2.6 is observed the comparison of exported volume for each country in the dataset.

The following main points emerge from the analysis, based on yearly average export volume:

- **Australia** in 2020 secured its position as the world’s largest exporter of GNL, marking a significant milestone in its energy sector. As of the beginning of 2021, the country boasted 15 operational LNG liquefaction facilities, collectively capable of producing nearly 4 trillion cubic feet (Tcf) of GNL annually. This robust infrastructure underscores Australia’s pivotal role in meeting global energy demands and underscores its commitment to sustainable energy production.
- **Malaysia** in 2019 was the fifth-largest LNG exporter in the world, and it shipped about 1.2 Trillion cubic feet of LNG and accounted for 7% of LNG exports worldwide
- **Nigeria** exported about 824 Billion Cubic feet of natural gas in 2021, most of which went to Europe or Asia. France and Spain were the top European importers in 2021, receiving 123 and 152 Billion Cubic feet of GNL from Nigeria, respectively.

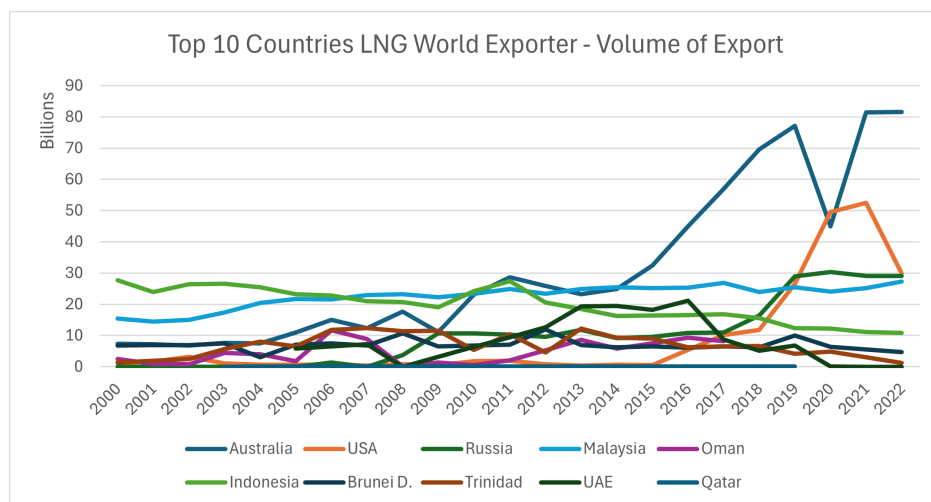


Figure 2.5: Historically Export Volume of top 10 countries LNG exporter. Source: UN Comtrade

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	Average	Max	trend
Australia	31'222'685	81'563'900	
USA	8'789'768	52'394'944	
Russia	10'123'610	30'282'527	
Malaysia	22'573'489	27'316'004	
Oman	4'625'653	11'631'809	
Indonesia	19'801'961	27'710'668	
Brunei D.	6'964'415	11'895'045	
Trinidad	6'788'694	12'405'808	
UAE	8'329'147	21'084'348	
Qatar	6'998'700	10'456'201	
Algeria	15'916'317	22'487'643	
Nigeria	50'990'591	581'456'456	
Egypt	3'864'075	11'178'599	
Eq. Guinea	2'348'771	3'580'249	
Angola	3'085'244	4'685'981	
Libya	4'544'479	13'636'188	
Cameroon	246'707	2'442'345	
Mozambique	17'772'933	126'367'269	
Tanzania	3'307	12'182	
South Afr.	5'549	15'487	
Sudan	20'989	56'511	
Kenya	459	2'584	
Namibia	302	1'536	
Ghana	51	208	
Botswana	125	609	
Rwanda	21	43	
Zambia	157	841	
Tunisia	30	335	
Uganda	214	662	
Norway	2'024'001	4'747'826	
Perù	2'071'473	4'375'094	
China	31'997	575'539	
Italy	239'280	918'526	
Belgium	324'220	987'542	

Figure 2.6: Comparison of Export Volume in Tons.
Source: UN Comtrade

2.2.3 Number of Importer for Country

The following variable was formulated to identify the number of LNG importers year by year for each country in the dataset. The variable was created as follows:

- Data was downloaded from *trademap.org*.
- A cut-off was set for each year, equal to 1%. In this manner, only countries importing a value greater than or equal to 1% of the annual net LNG exports, for each countries, were considered.
- The *COUNTIF* function in Excel was utilized.

What emerges from the analysis performed is summarized in Figure 2.9. For the relevant time horizon to which data are available, the last three columns in table show: the average number of importers, the maximum and the minimum number of countries and, at least, the trend.

For what concern the dataset of top 10 Exporter, it is observed in Figure 2.7 that:

- **Australia** is the largest supplier of LNG for the world's largest importers, supplying 43% of China's LNG imports and 39% of Japan's LNG imports in 2020. Australia basically exports LNG almost exclusively to markets in Asia.
- **USA** LNG exports primarily favored Asia and Mexico, with Europe capturing only 13% due to lower Russian piped gas prices. Meanwhile, U.S. LNG found success in the Middle East, North Africa, and Asia, competing with Qatar and Australian supplies. Since 2016, the U.S. exponentially increased LNG export, with Asia (mainly Japan), Mexico, MENA, and Europe emerging as key importers.
- **Qatar** most greater Areas importer are Asia (72 %) and Europe (21 %), in particularly Republic of Korea import, on average, 33 of total Qatar export volume, Japan 20% and India 15%.

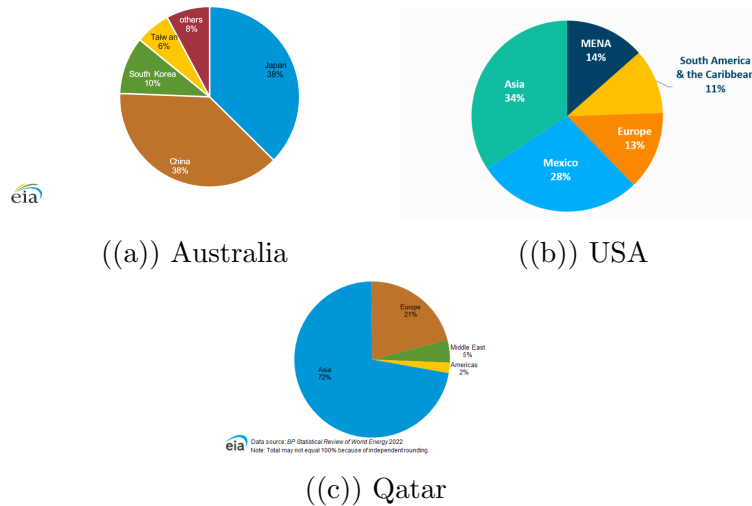


Figure 2.7: Main Importer, distribution
Source: EIA

Instead, studying the African dataset reveals that, observing Figure 2.8:

- **Algeria** main destination is European zone for, roughly, 95 % of total export. In particularly emerge Italy, Spain, France and Turkey.
- **Nigeria** exports accounted for about 6.5% of LNG traded globally. Spain was the largest importer of Nigeria’s LNG in 2018, followed by India, and France. The main Export area Europe and Asia.
- **Angola** starting from 2017, has experienced exponential growth in LNG production and exports, establishing itself as one of the world’s leading exporters. Exponential growth in LNG production and exports from Angola since 2017 can also be attributed to the establishment of a new terminal *Angola LNG Terminal*. The majority of exports is direct to Asia region, with India the largest importer. The greater European importer is Spain, across 10 % of total export.
- **Egypt** LNG shipments is directed to countries in the Asia Pacific region, with Pakistan, China, and Taiwan emerging as the three largest importers. Additionally, the United Kingdom accounted for approximately 10 % of Egypt’s total exports.

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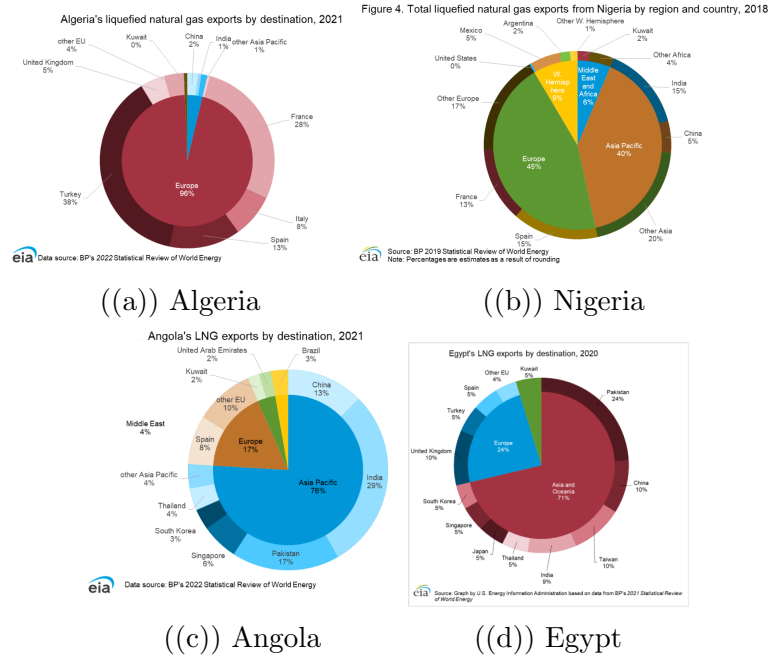


Figure 2.8: African Importer, distribution
Source: EIA

	2000	2001	2002	...	2020	2021	2022	Average	Max	Min	trend
Australia	3	3	3	...	3	3	3	4	6	3	
USA	3	3	3	...	22	21	22	8	22	2	
Russia	1	1	1	...	10	12	12	4	12	0	
Malaysia	3	3	3	...	6	5	6	4	6	3	
Oman	5	7	7	...	n.a.	n.a.	n.a.	4	7	0	
Indonesia	3	3	4	...	6	4	5	4	7	3	
Brunei D.	2	2	2	...	6	6	5	3	6	2	
Trinidad	3	4	3	...	12	9	7	9	20	2	
UAE	n.a.	n.a.	n.a.	...	2	6	1	1	6	0	
Qatar	n.a.	n.a.	n.a.	...	n.a.	n.a.	n.a.	12	17	5	
Algeria	7	7	7	...	14	13	14	10	14	6	
Nigeria	1	1	7	...	13	14	19	9	19	1	
Egypt	n.a.	n.a.	n.a.	...	11	16	18	11	18	1	
Eq. Guinea	n.a.	n.a.	n.a.	...	10	10	13	7	13	1	
Angola	n.a.	n.a.	n.a.	...	12	16	11	13	16	11	
Libya	n.a.	n.a.	n.a.	...	1	n.a.	n.a.	1	2	1	
Cameroon	1	1	2	...	1	5	5	2	7	1	
Mozambique	n.a.	n.a.	n.a.	...	1	1	1	1	3	1	
Tanzania	n.a.	n.a.	n.a.	...	4	3	3	2	4	1	
South Afr.	7	8	7	...	4	3	4	6	10	3	
Sudan	n.a.	1	2	...	n.a.	n.a.	n.a.	2	2	1	
Kenya	n.a.	1	2	...	1	1	1	2	4	1	
Namibia	3	3	5	...	0	0	0	2	5	0	
Ghana	n.a.	n.a.	n.a.	...	2	2	3	1	3	1	
Botswana	3	2	3	...	1	1	1	2	4	1	
Rwanda	n.a.	n.a.	n.a.	...	1	n.a.	n.a.	1	2	1	
Zambia	n.a.	n.a.	n.a.	...	1	n.a.	n.a.	1	3	1	
Tunisia	1	1	1	...	n.a.	n.a.	n.a.	1	2	1	
Uganda	n.a.	n.a.	n.a.	...	n.a.	n.a.	n.a.	1	2	1	
Norway	3	2	1	...	13	6	11	9	21	1	
Perù	1	1	1	...	8	8	7	5	11	1	
Spain	n.a.	n.a.	1	...	7	11	11	6	15	1	
China	1	1	1	...	3	28	1	6	1	6	
Italy	2	2	1	...	2	2	2	3	5	1	
Belgium	n.a.	n.a.	1	...	5	9	8	5	9	1	

Figure 2.9: Number of Importer - resume
Source: trademap.org

2.3 Macroeconomics Variable

This section discusses about four macroeconomic variables that were included in the dataset. All macroeconomics variable are control variables for the purpose of multivariate linear regression.

The used database used from which the following variables were downloaded is *UNCTADSTAT*⁵. The following variable are:

- **Gross Development Product per Capita:** this variable was chosen because there can be various relationships between GDP per capita, geopolitical risk, and the price of LNG, although no direct and universal correlation exists among these factors. However, here are some potential connections:
 - GDP per capita and liquefied methane export price: Generally, a rise in a country's GDP per capita could indicate greater economic prosperity and energy demand, positively impacting the export price of liquefied methane. Countries with high GDP per capita might be willing to pay more for energy, thus increasing the export price.
 - Interconnection between GDP per capita, geopolitical risk, and export price: In some cases, high economic prosperity may mitigate geopolitical risk. Economically strong countries might invest in resources to ensure political stability and energy infrastructure security, thereby reducing geopolitical risk and maintaining stable export prices. Ultimately, these relationships depend on specific contextual variables, including the geographical location of producing countries, national energy policies, international relations, and global energy demand.
- **Product Concentration Index on Export:** this variable measures how much a country relies on a limited number of products for its exports. A high index suggests heavy reliance, while a low index indicates export diversification across various products, reducing economic vulnerability.

The Product Concentration Index on Export, LNG export price, and geopolitical risk may be related. A high concentration index can increase economic dependence on specific products, rendering the country more vulnerable to changes in export prices and geopolitical risk associated with dominant sectors.

⁵Harmonized database of United Nation

- **Consumer Price Index:** statistical index used to measure changes in the price level of goods and services purchased by consumers over a specified period of time. The CPI is used to monitor inflation and fluctuations in consumer prices, providing an indication of the cost of living for consumers.

The relationships between CPI, LNG export price, and geopolitical risk are intertwined. A rise in CPI may escalate LNG export prices due to increased consumer costs. Geopolitical tensions, affecting supply routes, can elevate LNG export prices and drive CPI. Additionally, geopolitical instability can disrupt LNG supply, heightening price volatility and potentially inflating CPI. These interconnections underscore the complex interplay among economic indicators, energy markets, and geopolitical dynamics.

- **Exchange Rate;** the interplay between exchange rates, LNG export prices, and geopolitical risk is complex. Exchange rate fluctuations influence LNG competitiveness: a stronger rate may lower export prices, while a weaker one could increase them. Geopolitical tensions affect exchange rates via investor sentiment, potentially weakening them. Geopolitical risks can directly impact LNG export prices through supply chain disruptions or instability in transportation routes. Events like conflicts or sanctions may raise export prices due to supply interruptions. Understanding these connections is crucial for analyzing LNG markets and their global economic impact.

2.4 Geopolitical Risk Index

2.4.1 Caldara and Iacoviello (C&I) GPR Index

Dario Caldara and Matteo Iacoviello [Caldara and Iacoviello, 2022] have developed a measure of adverse geopolitical events and associated risks by analyzing newspaper articles covering tensions between states and political actors since 1900. This Geopolitical Risk (GPR) index provides a continuous assessment of risk, reflecting the current intensity of negative events, the probability of future events, and the expected intensity of those events. By quantifying geopolitical risk in this way, they offer insights into the evolving nature of international relations and the potential economic effects of geopolitical tensions, including wars, terrorism, and political conflicts.

The Geopolitical Risk Index (GPR) is measured by **frequency** of articles

discussing about adverse geopolitical events.

$$GPR = \frac{G}{M}$$

Where G is articles mentioning adverse geopolitical events and M total number of articles.

The Geopolitical Risk (GPR) index is constructed using data extracted from approximately 25 million news articles published in leading English-language newspapers from 1900 to the present. This process involves counting the share of articles discussing adverse geopolitical events and associated threats on a monthly basis. To define the outcome of interest, a dictionary-based method is employed, which specifies a set of words indicating coverage of geopolitical events and threats within the articles. This method incorporates prior knowledge about how certain features of text, such as the occurrence of words like "war" and "threat" in close proximity, correlate with the desired outcome, i.e., news coverage of geopolitical risks. The construction of the dictionary is guided by several factors. Firstly, it aligns closely with the adopted definition of geopolitical risk. Secondly, it draws on information from two geopolitical textbooks and the Corpus of Historical American English to identify themes and words associated with geopolitical events, such as "war on terror" or "nuclear weapon," as well as words commonly used alongside war-related terms, like "declare." Lastly, the dictionary is organized around high-frequency words and their synonyms that are more prevalent in newspapers during periods of heightened geopolitical tensions. For example, words such as "crisis," "terror," "blockade," "invasion," "troops," and "war" are likely to appear more frequently on days characterized by elevated geopolitical risks, compared to average days.

Caldara and Iacoviello employ a method to construct country-specific measures of geopolitical risk, focusing on joint occurrences in newspapers of geopolitical terms and the name of the country, its capital, or main city. This geographical disaggregation enables a more detailed assessment of the index, offering insights into individual countries' exposure to global risks and highlighting geopolitical events that may have significance at a regional level but receive limited attention in the aggregate index. Notably, these indices are developed using data from three prominent US newspapers, providing a perspective on the risks posed by or involving the respective country from a US standpoint.

For the states for which Caldara and Iacoviello GPR was applicable, transitioning from daily to annual measurements necessitated averaging the annual data. The countries for which OLS is applicable with the Caldara and Iacoviello GPR Index are the states listed in Paragraph 1.4.

2.4.2 World Governance Indicator (WGI) Indexes

The Worldwide Governance Indicators (WGI) are a comprehensive research initiative aimed at creating indicators to assess governance across countries. These indicators encompass six main aspects of governance spanning from 1996 onwards, the WGI cover over 200 countries. They are built upon a multitude of data sources, incorporating input from surveys, non-governmental organizations, commercial entities, and public sector organizations globally. These Indicators, according the definition provide by [Kaufmann and Kray, 2010] in the World Bank Journal publication, are:

- **Voice and Accountability (VA)**: capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.
- **Political Stability and Absence of Violence/Terrorism (PS)**: perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.
- **Government Effectiveness (GE)**: quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.
- **Regulatory Quality (RQ)**: perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.
- **Rule of Law (RL)**: perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.
- **Control of Corruption (CC)**: capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.

For this variable, among the provided data, it has been considered the value *RANK*, for each year, allowing to construct a trend over the span of 22 years. The ranking value, for each indicators, is a percentile rank among all

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countries: the ranges is from 0 (lowest) to 100 (highest) rank ⁶.

An average ranking, for each Indicator AND for each dataset's country, over the 22-year time horizon was constructed and showed in the Table 2.2. For each country, is provide the assigned ranks.

Ranking	VA	PS	GE	RQ	RL	CC
1	Norway	99 Norway	93 Norway	97 Australia	96 Norway	99 Norway
2	Australia	94 Brunei Darussalam	91 Australia	93 Norway	91 Australia	95 Australia
3	Belgium	93 Botswana	84 Belgium	91 United States	91 United States	91 Belgium
4	United States	84 Qatar	82 United States	90 Belgium	87 Belgium	89 United States
5	Spain	84 Australia	81 Spain	83 Spain	82 Spain	83 Spain
6	Italy	80 Mauritius	77 United Arab Emirates	82 Brunei Darussalam	79 Mauritius	78 United Arab Emirates
7	Mauritius	72 United Arab Emirates	73 Malaysia	80 Italy	75 Qatar	72 Botswana
8	South Africa	68 Seychelles	73 Brunei Darussalam	80 Mauritius	75 United Arab Emirates	69 Qatar
9	Trinidad and Tobago	65 Oman	72 Mauritius	76 United Arab Emirates	74 Brunei Darussalam	69 Seychelles
10	Botswana	63 Belgium	72 Qatar	74 Botswana	72 Botswana	67 Brunei Darussalam
11	Namibia	61 Namibia	68 Seychelles	72 Malaysia	69 Oman	65 Oman
12	Ghana	60 Italy	62 Italy	69 Qatar	68 Italy	64 Italy
13	Benin	54 United States	58 Botswana	67 Oman	67 Malaysia	64 Mauritius
14	Seychelles	53 Benin	53 Trinidad and Tobago	63 South Africa	63 Seychelles	62 Namibia
15	Peru	52 Malaysia	53 South Africa	62 Peru	62 Namibia	60 Malaysia
16	Indonesia	48 Gabon	53 Oman	61 Trinidad and Tobago	61 South Africa	54 South Africa
17	Lesotho	47 Zambia	53 China	61 Namibia	57 Ghana	54 Rwanda
18	Mali	45 Spain	50 Namibia	60 Seychelles	56 Tunisia	53 Lesotho
19	Mozambique	40 Trinidad and Tobago	48 Tunisia	58 Morocco	49 Trinidad and Tobago	52 Tunisia
20	Burkina Faso	39 Ghana	46 Ghana	49 Ghana	49 Morocco	47 Ghana
21	Zambia	39 Lesotho	45 Indonesia	48 Tunisia	46 Lesotho	46 Trinidad and Tobago
22	Tanzania	38 Equatorial Guinea	44 Morocco	47 Uganda	44 Egypt, Arab Rep.	44 Eswatini
23	Kenya	38 South Africa	39 Rwanda	43 Indonesia	43 Rwanda	41 Burkina Faso
24	Madagascar	38 Mozambique	39 Peru	41 Kenya	42 China	40 Morocco
25	Niger	37 Eswatini	38 Russian Federation	40 China	42 Uganda	39 China
26	Sierra Leone	37 Madagascar	35 Egypt, Arab Rep.	38 Burkina Faso	42 Zambia	39 Peru
27	Malaysia	36 Sierra Leone	35 Benin	36 Rwanda	40 Tanzania	39 Zambia
28	Tunisia	34 Tunisia	35 Lesotho	35 Eswatini	39 Burkina Faso	37 Benin
29	Nigeria	30 Rwanda	33 Algeria	34 Russian Federation	38 Mali	35 Tanzania
30	Morocco	30 Tanzania	33 Kenya	34 Gabon	34 Eswatini	35 Madagascar
31	Uganda	28 Morocco	33 Uganda	34 Benin	34 Gabon	34 Egypt, Arab Rep.
32	Brunei Darussalam	25 Burkina Faso	30 Eswatini	32 Egypt, Arab Rep.	34 Indonesia	34 Ethiopia
33	Gabon	25 China	30 Tanzania	32 Tanzania	33 Benin	34 Mozambique
34	Côte d'Ivoire	24 Mali	29 Mozambique	29 Mali	32 Peru	33 Algeria
35	Russian Federation	24 Libya	29 Burkina Faso	28 Madagascar	32 Niger	32 Mali
36	United Arab Emirates	22 Congo, Rep.	27 Ethiopia	27 Lesotho	32 Madagascar	30 Indonesia
37	Qatar	21 Angola	26 Niger	25 Mozambique	31 Ethiopia	29 Niger
38	Algeria	21 Peru	25 Gabon	25 Zambia	31 Kenya	27 Côte d'Ivoire
39	Oman	20 Cameroon	23 Zambia	24 Côte d'Ivoire	29 Mozambique	25 Sierra Leone
40	Cameroon	18 Niger	22 Madagascar	22 Niger	28 Algeria	24 Gabon
41	Congo, Rep.	16 Indonesia	19 Cameroon	20 Cameroon	20 Russian Federation	21 Russian Federation
42	Angola	16 Egypt, Arab Rep.	19 Mali	20 Algeria	20 Sierra Leone	18 Kenya
43	Egypt, Arab Rep.	15 Russian Federation	18 Côte d'Ivoire	18 Nigeria	19 Côte d'Ivoire	17 Uganda
44	Ethiopia	14 Uganda	17 Nigeria	14 Sierra Leone	17 Nigeria	13 Cameroon
45	Rwanda	14 Kenya	13 Angola	12 Angola	16 Cameroon	13 Congo, Rep.
46	Eswatini	11 Algeria	13 Equatorial Guinea	10 Ethiopia	15 Libya	12 Nigeria
47	Libya	8 Côte d'Ivoire	11 Libya	10 Congo, Rep.	10 Equatorial Guinea	11 Libya
48	China	6 Ethiopia	9 Congo, Rep.	10 Sudan	7 Congo, Rep.	11 Angola
49	Sudan	5 Nigeria	5 Sierra Leone	9 Equatorial Guinea	5 Angola	10 Sudan
50	Equatorial Guinea	3 Sudan	4 Sudan	7 Libya	5 Sudan	8 Equatorial Guinea

Table 2.2: WGI; Average Ranking

2.4.3 Heritage Index

The Index of Economic Freedom [Foundation, 2023] evaluates four main areas of the economic and entrepreneurial landscape typically under government control: **the rule of law, government size, regulatory efficiency, market openness**. Within these categories, it assesses 12 specific components of economic freedom, grading each on a scale from 0 to 100. These scores are derived from various sub-variables and are then equally weighted and averaged to generate an overall economic freedom score for each economy. This

⁶description provide by World Bank database

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paragraph discuss about the methodology employed to calculate the scores for each of the 12 economic freedom components and the relative application in thesis.

1. Rule of Law

- **Property Rights:** measures how much a country's laws support people in owning and using private property, and how well the government enforces these laws to protect those rights.
- **Judicial Effectiveness:** A well-working legal system is crucial for safeguarding everyone's rights from illegal actions by individuals, governments, or influential private entities.
- **Government Integrity:** Corruption harms economic freedom by creating uncertainty and coercion in economic dealings, especially when government institutions are systemically corrupted.

2. Government Size

- **Tax Burden:** composite measure that reflects marginal tax rates on both personal and corporate income and the overall level of taxation.
- **Government Spending:** The Index methodology treats zero government spending as the benchmark. As a result, underdeveloped countries, particularly those with little government capacity, may receive artificially high scores.
- **Fiscal Health:** When governments mismanage their budgets, resulting in increasing deficits and mounting debt, it harms the overall fiscal health of a country. This decline in fiscal health is linked with instability in the economy and increased uncertainty.

3. Regulatory Efficiency

- **Business Freedom:** gauges how much a country's regulations and infrastructure limit the smooth functioning of businesses.
- **Labor Freedom:** evaluates different aspects of a country's labor market regulations, such as minimum wage laws, rights to unionize, restrictions on layoffs, severance regulations, and measurable constraints on hiring and working hours.

- **Monetary Freedom:** looks at both inflation rates and government actions that influence prices. The ideal scenario for a free market is stable prices without government interference in microeconomics.

4. Open Markets

- **Trade Freedom:** a composite measure of the extent of tariff and non-tariff barriers that affect imports and exports of goods and services.
- **Investment Freedom:** evaluation of variety of regulatory restrictions that typically are imposed on investment.
- **Investment Restriction:** deduction of point based on created taxonomy ⁷
- **Financial Freedom:** both an indicator of banking efficiency and a measure of independence from government control and interference in the financial sector.

Based on the criteria outlined above, the Heritage index was employed for each country listed in Table 2.3 to conduct the OLS analysis described in the subsequent chapter. Within the following Table, an average ranking was calculated for each country annually, and subsequently, a country ranking was derived based on these averages of Economic Freedom. In the third column, the obtained Ranking.

⁷This taxonomy is available in the Heritage Index explanation Methodology, for common use, this taxonomy is not explained because is out of scope of dissertation

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1	Australia	81	19	Ghana	59
2	USA	77	20	Tanzania	59
3	UAE	70	21	Tunisia	58
4	Norway	70	22	Indonesia	58
5	Belgium	69	23	Kenya	57
6	Botswana	69	24	Zambia	57
7	Spain	68	25	Egypt	55
8	Brunei	67	26	Nigeria	54
9	Malaysia	67	27	Mozambique	54
10	Perù	66	28	China	54
11	Oman	66	29	Russia	53
12	Rwanda	66	30	Cameroon	53
13	Trinidad	66	31	Algeria	53
14	Qatar	64	32	Angola	51
15	Italy	63	33	Sudan	48
16	South Africa	63	34	Eq. Guinea	47
17	Namibia	62	35	Libya	17
18	Uganda	62			

Table 2.3: Heritage Index; Average Ranking

Chapter 3

OLS Analysis and Discussion of Results

In this chapter, the results of the experiments conducted will be discussed. In Section 3.1.1 will be discuss about the impact of only macroeconomics variable on GNL export price, in Section 3.1.3 will be discuss about the impact of different World Governance Indicator and finally at Section 3.1.4 the Impact of Heritage Index will be discussed. At the end of chapter, the Section 3.2 will be provide a summary of all of results and identify the best model perform and Section 3.3 will provide tips for future research.

3.1 OLS Results

3.1.1 Impact without GPR Indexes

In this paragraph, we will discuss the results obtained from the multivariate linear regression analysis, focusing exclusively on the inclusion of macroeconomic variables in the model. The aim is to understand the impact and significance of these macroeconomic indicators on the LNG Price, the dependent variable. The analysis will provide insights into how these variables interact and contribute to the overall model, highlighting their predictive power and relevance in the context of our study. Through this examination, we will identify key macroeconomic factors that play a crucial role in explaining the variability observed in the data.

The results of these regressions are based on a sample of $N = 34$ states, and the regression outcomes can be found in *Model 1* of the regression tables at Section A.

In Table 3.1, the R^2 values obtained from the various regressions in the

model are summarized, providing an overview of the explanatory power of the included macroeconomic variables. The table is divided into three categories, one for each sub-dataset: Top 10 world exporter, African Countries and "Other", utilised for Caldara & Iacoviello ¹. The "Top 10" category showcases the states with the highest R^2 values, indicating a strong explanatory power of the selected macroeconomic variables on the LNG price. For instance, **Trinidad and Tobago** and **Qatar** have very high R^2 values of 0.967 and 0.966, respectively, suggesting that the model explains nearly all the variability in LNG prices for these states. In the African Sub-dataset, **Sudan** leads with an R^2 value of 0.977, followed by **Cameroon** and **Zambia** with R^2 values of 0.941 and 0.918, respectively. This indicates that the model is also highly effective in explaining LNG price variations in these African states. From the "Other Countries Sub-Dataset emerge, with **China** and **Spain** having notably high R^2 values of 0.993 and 0.983, respectively.

Trinidad and Tobago	0.967	Sudan	0.977	China	0.993
Qatar	0.954	Cameroon	0.941	Spain	0.983
UAE	0.926	Zambia	0.918	Norway	0.924
Australia	0.925	Kenya	0.907	Belgium	0.885
USA	0.908	Algeria	0.884	Italy	0.822
Brunei Darussalam	0.889	Rwanda	0.823	Perù	0.729
Oman	0.854	South Africa	0.820		
Indonesia	0.822	Tunisia	0.816		
Malaysia	0.789	Nigeria	0.805		
Russia	0.708	Equatorial Guinea	0.766		
		Namibia	0.737		
		Ghana	0.704		
		Mozambique	0.660		
		Uganda	0.655		
		Egypt	0.636		
		Libya	0.521		
		Botswana	0.464		
		Tanzania	0.216		

Table 3.1: R^2 Results without any Index

Table 3.2, presented aggregates the p -values from the multivariate linear regressions across different states, summarizing the significance levels of each

¹This Index are explained at section 2.4.1 and the Impact on OLS at the following Section 3.1.2

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Without Index	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	3	1	5
GDP PC	1	8	4
PCOE	1	3	2
CPI	6	2	4
ER	2	4	2
VOL	1	7	14
N. IMP	0	4	5

Table 3.2: Aggregated p-values from Multivariate Linear Regressions Across Different States, Model without Indexes

variable in the regressions. This summary helps identify which variables were the most statistically significant in predicting the price of liquefied natural gas (LNG) across the sample of states.

Overall, the variables **Volume of Export** and **GDP per Capita** appear to be the most significant predictors of LNG prices across the states, as indicated by the high number of regressions with very low p-values. The summary provides a clear picture of which macroeconomic factors play crucial roles in the multivariate linear regression models for LNG prices.

Among the Countries that respond best to the regression model are:

- **Australia:** Australia has the **CPI** and **Volume** with $p\text{-value} < 0.01$. The CPI has $\beta > 0$, indicating a significant positive impact on LNG prices, while the Volume has a $\beta = 0$, showing no significant effect, but important at statistics level ².
- **Cameroon:** Cameroon has Volume and the Number of Importers with $p\text{-value} < 0.01$. The Volume has a $\beta > 0$, suggesting a significant positive impact on LNG prices, whereas the Number of Importers has a $\beta < 0$, indicating a negative effect on LNG prices.
- **Kenya:** Kenya has Volume and the Number of Importers with $p\text{-value} < 0.01$. Both Volume and the Number of Importers have $\beta >$

²Explanation: $\beta > 0$: Indicates that an increase in this variable is associated with an increase in LNG prices. For example, in Australia, a higher CPI (indicating higher inflation) leads to higher LNG prices; $\beta < 0$: Indicates that an increase in this variable is associated with a decrease in LNG prices. For instance, in Cameroon, a higher number of importers leads to lower LNG prices. $\beta = 0$: Indicates no significant relationship between the variable and LNG prices. In Trinidad and Tobago, the Volume of exports does not significantly affect LNG prices.

0, indicating that both factors significantly and positively affect LNG prices.

- **Zambia:** Zambia has Product Concentration on Export (PCOE), CPI, Exchange Rate, Volume of Export and the Number of Importers with $p - value < 0.01$. All variables have $\beta > 0$, except for Exchange Rate, which has a $\beta < 0$. This suggests that while most factors positively influence LNG prices, the Exchange Rate negatively impacts them.
- **Trinidad and Tobago:** Trinidad and Tobago has GDP per Capita (GDP PC) and Volume with $p - value < 0.01$. PCOE and the Number of Importers with $p - value < 0.05$. The GDP PC has $\beta > 0$, indicating a positive impact on LNG prices. The PCOE has $\beta < 0$, indicating a negative effect, the Volume has $\beta = 0$ and the Number of Importers has $\beta < 0$, indicating a negative effect on LNG prices.
- **Qatar:** has GDP per Capita (GDP PC) with $p - value < 0.01$ and Exchange Rate with with $p - value < 0.05$. The GDP Per Capita has $\beta > 0$, indicating a positive impact on LNG prices but Exchange Rate has $\beta < 0$, indicating a negative impact on LNG.

These results suggest that while some variables consistently influence LNG prices across different states, the direction and significance of these effects can vary, reflecting the unique economic and market conditions in each state.

3.1.2 Impact with C&I Index

In this paragraph, unlike the previous one, we conduct the Ordinary Least Squares regression including the Geopolitical Risk computed by Caldara and Iacoviello. This new variable is incorporated into the model to evaluate its impact on the dependent variable and to determine whether its inclusion improves the explanatory power of the regression.

The results of these regressions are based on a sample of $N = 12$ Countries, and the regression outcomes can be found in *Model 2* of the regression tables at Section A.

The table 3.3 shows the R^2 values obtained from multivariate linear regressions, this time including the C&I GPR Index as an additional independent variable. In this case, it noticed that Russia has an R^2 of 0.966, indicating that the model explains nearly all the variability in LNG prices for Russia. This is one of the highest R^2 values in the table, suggesting that the inclusion of the C&I index has significantly enhanced the model's explanatory power

Top 10	R^2	Africa	R^2	Other	R^2
Russia	0.966	South Africa	0.822	China	0.993
Australia	0.95	Egypt	0.645	Spain	0.985
USA	0.922			Norway	0.936
Malaysia	0.794			Belgium	0.894
				Italy	0.824
				Perù	0.765

Table 3.3: R^2 Results with C&I GPR Index

than, Australia has an R^2 of 0.950, indicating a high level of explanation for the variability in LNG prices.

C&I	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	2	1	1
GDP PC	0	3	0
PCOE	0	2	1
CPI	0	1	2
ER	0	3	0
VOL	0	2	6
N. IMP	0	2	1
C&I	0	1	1

Table 3.4: Aggregated p-values from Multivariate Linear Regressions Across Different States, C&I Index Model

In Table 3.4, similar to the previous one, we can observe which states have responded most significantly to the regression model, but including the GPR risk index. Among these states, **Australia** stands out with a p -value < 0.05 for the **GPR index** and a $\beta > 0$, indicating that as geopolitical risk increases, so does the price of LNG. Additionally, consistent with the model without any index presented earlier, the **CPI** also has a p -value < 0.05 and a $\beta > 0$, showing its significant impact on LNG prices. The volume variable also has a p -value < 0.01 and a $\beta = 0$, indicating it is statistically significant but not practically important.

Particularly noteworthy is **Russia**, which shows a p -value < 0.01 and a $\beta > 0$ for the Caldara and Iacoviello index. This suggests that in **Russia**, as geopolitical tensions and wars increase, the price of LNG also rises. Additionally, a decrease in the **exchange rate**, with a $\beta < 0$ and p -value < 0.05,

corresponds to an increase in the price of LNG. This highlights the complex interplay of geopolitical risk and economic factors in determining LNG prices in Russia.

3.1.3 Impact with WGI Indexes

WGI - Political Stability and absence of Violence

The countries in dataset for which the regression results were most significant, based on Table 3.6 are:

- **Perù:** The increase in the export price of LNG is associated with a $\beta < 0$ for the WGI indicator, which is significant with $p\text{-value} < 0.01$. Additionally, the regression provides consistent results regarding GDP per Capita and the exchange rate. A possible interpretation is driven by the following idea: instability or violence in a country can create uncertainties and risks that might disrupt supply chains or production capacities, leading to reduced supply of LNG. Reduced supply, in the face of steady or increasing demand, can drive up prices.
- **Belgium:** The regression results show a $p\text{-value} < 0.05$ for the WGI indicator with a $\beta > 0$. Furthermore, the volume is a significant component with a $p\text{-value} < 0.01$.
- **Tanzania:** The regression provides results with a $p\text{-value} < 0.05$ for the WGI indicator with $\beta > 0$.

WGI - Voice and Accountability

In this case, the most sensitive results, have been carried out by the following regression:

- **Ghana:** in this case we get a $p\text{-value} < 0,01$ with $\beta < 0$. Possible interpretation is given by the idea that negative β for the **Voice and Accountability** in relation to the export price of LNG suggests that *decreased* levels of democratic governance and accountability are associated with *higher* LNG export prices.
- **Brunei Darussalam:** the OLS computed $\beta > 0$ for the WGI indicator and for GDP per Capita, furthermore both variable have $p\text{-value} < 0,01$.

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Top 10	R^2	Africa	R^2	Other	R^2
Trinidad and Tobago	0.968	Sudan	0.979	China	0.993
Qatar	0.955	Zambia	0.949	Spain	0.984
UAE	0.929	Cameroon	0.944	Norway	0.934
Australia	0.926	Kenya	0.907	Belgium	0.919
USA	0.914	Algeria	0.886	Perù	0.897
Brunei Darussalam	0.896	Rwanda	0.847	Italy	0.845
Oman	0.876	Tunisia	0.841		
Indonesia	0.86	South Africa	0.82		
Malaysia	0.794	Nigeria	0.806		
Russia	0.743	Equatorial Guinea	0.784		
		Namibia	0.762		
		Ghana	0.74		
		Egypt	0.675		
		Uganda	0.67		
		Mozambique	0.66		
		Tanzania	0.546		
		Botswana	0.543		
		Libya	0.529		

Table 3.5: R^2 Results with WGI - Political Stability and absence of Violence

WGI v1	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	1	6	2
GDP PC	0	6	6
PCOE	2	2	2
CPI	3	1	3
ER	1	5	2
VOL	2	6	13
N. IMP	0	4	6
WGI	1	2	1

Table 3.6: Aggregated p-values from Multivariate Linear Regressions Across Different States, WGI - Political Stability and absence of Violence

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Top 10	R^2	Africa	R^2	Other	R^2
Trinidad and Tobago	0.969	Sudan	0.977	China	0.994
Brunei Darussalam	0.961	Zambia	0.95	Spain	0.984
Qatar	0.955	Cameroon	0.948	Norway	0.924
Australia	0.944	Kenya	0.908	Belgium	0.887
UAE	0.93	Algeria	0.884	Italy	0.824
USA	0.907	Ghana	0.87	Perù	0.737
Oman	0.86	Tunisia	0.840		
Indonesia	0.822	South Africa	0.824		
Malaysia	0.797	Rwanda	0.823		
Russia	0.741	Nigeria	0.809		
		Equatorial Guinea	0.784		
		Namibia	0.777		
		Libya	0.729		
		Uganda	0.683		
		Mozambique	0.663		
		Egypt	0.655		
		Botswana	0.466		
		Tanzania	0.289		

Table 3.7: R^2 Results with WGI - Voice and Accountability

WGI v2	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	1	4	3
GDP PC	2	2	5
PCOE	1	3	2
CPI	4	2	3
ER	1	8	0
VOL	2	7	14
N. IMP	2	3	4
WGI	0	1	2

Table 3.8: Aggregated p-values from Multivariate Linear Regressions Across Different States, WGI - Voice and Accountability

WGI - Government Effectiveness

The most fitted results computed by these regressions are given by the following countries:

- **Ghana:** the regression provides a $\beta > 0$ for **Exchange Rate** and for **WGI** Indicator. Furthermore, these indicators, get a $p - value < 0,01$.
- **Sudan:** In this regression has computed a $\beta < 0$ for **WGI** indicator with significance level with $p - value < 0,05$.
- **Brunei Darussalam:** in this case is computed a $\beta < 0$ for the **WGI** indicator with significance level with $p - value < 0,05$ and a $\beta > 0$ with significance level with $p - value < 0,01$ for the **GDP PC**.

Top 10	R^2	Africa	R^2	Other	R^2
Trinidad and Tobago	0.974	Sudan	0.986	China	0.993
Qatar	0.954	Zambia	0.949	Spain	0.984
UAE	0.928	Cameroon	0.942	Norway	0.924
USA	0.928	Kenya	0.911	Belgium	0.924
Australia	0.925	Ghana	0.897	Italy	0.823
Brunei Darussalam	0.915	Algeria	0.885	Perù	0.731
Oman	0.854	Rwanda	0.843		
Indonesia	0.837	South Africa	0.828		
Malaysia	0.817	Tunisia	0.82		
Russia	0.756	Nigeria	0.806		
		Equatorial Guinea	0.789		
		Mozambique	0.755		
		Namibia	0.741		
		Uganda	0.697		
		Egypt	0.644		
		Libya	0.578		
		Botswana	0.466		
		Tanzania	0.253		

Table 3.9: R^2 Results with WGI - Government Effectiveness

WGI - Regulatory Quality

The most significant results emerge from the OLS with **Perù**: The increase in the export price of LNG is associated with a $\beta < 0$ for the WGI indicator,

WGI v3	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	2	3	3
GDP PC	1	7	3
PCOE	1	3	2
CPI	4	1	3
ER	0	6	2
VOL	2	6	14
N. IMP	0	4	4
WGI	1	3	1

Table 3.10: Aggregated p-values from Multivariate Linear Regressions Across Different States, WGI - Government Effectiveness

which is significant with $p - value < 0.01$. Furthermore the regression compute a $\beta > 0$ value for the **CPI**, which is significant with $p - value < 0.01$. $\beta > 0$ for the **Regulatory Quality** indicator in relation to the **export price** of LNG, suggests that an increase in regulatory quality is associated with a decrease in the price of LNG. This inverse relationship highlights how effective and well-structured regulations can improve operational efficiency, reduce costs, and increase competitiveness in the LNG market.

WGI - Rule of Law

The best results are obtained from the regressions on the following Countries:

- **Belgium:** by this regression, it's possible to observe a $\beta > 0$ with $p - value < 0,01$ for **PCOE**, **Volume of Export** and for the **WGI** indicator. Positive beta for the **Rule of Law** indicator in relation to the export price of LNG suggests that an *improvement* in the quality of the rule of law is associated with an increase in the price of LNG. This direct relationship reflects how a strong rule of law can enhance market confidence, increase investment security, and justify higher compliance costs, which in turn can lead to higher export prices.
- **Qatar:** by this regression, it has been computed a $\beta < 0$ with $p - value < 0,05$ for the **WGI** indicator; and a $\beta < 0$ with $p - value < 0,01$ for the **Exchange Rate**. Opposite phenomenon compared to what happened for Belgium, it is clear that a **worsening** of quality of the rule of law is associated with an increase in the price of LNG.
- **Qatar:** As for Qatar, in this case it has been computed a $\beta < 0$ with $p - value < 0,05$ for the **WGI** indicator. This phenomenon justify a

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Top 10	R2	Africa	R2	Other	R2
Trinidad and Tobago	0.972	Sudan	0.977	China	0.993
Qatar	0.957	Zambia	0.948	Spain	0.986
UAE	0.931	Cameroon	0.941	Norway	0.931
Australia	0.925	Kenya	0.909	Belgium	0.886
USA	0.912	Algeria	0.885	Perù	0.84
Oman	0.906	Rwanda	0.834	Italy	0.825
Brunei Darussalam	0.905	Tunisia	0.830		
Malaysia	0.829	South Africa	0.82		
Indonesia	0.823	Nigeria	0.805		
Russia	0.742	Namibia	0.801		
		Equatorial Guinea	0.767		
		Ghana	0.743		
		Mozambique	0.665		
		Uganda	0.656		
		Egypt	0.64		
		Libya	0.6		
		Botswana	0.465		
		Tanzania	0.216		

Table 3.11: R^2 Results with WGI - Regulatory Quality

WGI v4	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	2	3	2
GDP PC	1	4	4
PCOE	1	3	3
CPI	3	2	4
ER	1	3	3
VOL	1	5	15
N. IMP	0	3	5
WGI	2	2	1

Table 3.12: Aggregated p-values from Multivariate Linear Regressions Across Different States, WGI - Regulatory Quality

worsening of quality of the rule of law, which is associated an increase in the price of LNG.

Top 10	R^2	Africa	R^2	Other	R^2
Trinidad and Tobago	0.972	Sudan	0.98	China	0.993
Qatar	0.971	Zambia	0.949	Spain	0.986
Australia	0.933	Cameroon	0.941	Norway	0.936
UAE	0.928	Kenya	0.925	Belgium	0.935
Brunei Darussalam	0.907	Algeria	0.891	Italy	0.854
USA	0.907	Tunisia	0.841	Perù	0.729
Oman	0.855	Rwanda	0.830		
Indonesia	0.822	South Africa	0.829		
Malaysia	0.803	Ghana	0.824		
Russia	0.77	Nigeria	0.812		
		Equatorial Guinea	0.771		
		Namibia	0.758		
		Mozambique	0.661		
		Uganda	0.661		
		Egypt	0.657		
		Libya	0.521		
		Botswana	0.469		
		Tanzania	0.247		

Table 3.13: R^2 Results with WGI - Rule of Law

Control of Corruption

The best results in this case, have been carried out by the following countries:

- **USA:** according this regression, it's possible to observe $\beta > 0$ and $p\text{-value} < 0,01$ for **GDP PC** and **CPI**. A $\beta < 0$ and $p\text{-value} < 0,01$ for **Exchange Rate** and **WGI** Indicator. This results suggest that a *decrease* in Control of Corruption is associated with an *increase* of GNL Export Price
- **Malaysia:** In this case, with an increase of LNG export price is associated an increase of **WGI** indicator. The regression provide a $\beta > 0$ with $p\text{-value} < 0,01$.
- **Botswana:** As for Malaysia, the regression results provide a $\beta > 0$ with $p\text{-value} < 0,05$, meaning that, increase of LNG export price is associated an increase of **Control of Corruption**.

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WGI v5	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	1	1	4
GDP PC	3	6	5
PCOE	2	1	4
CPI	3	4	3
ER	2	3	2
VOL	3	7	12
N. IMP	1	3	5
WGI	3	2	1

Table 3.14: Aggregated p-values from Multivariate Linear Regressions
Across Different States, WGI - Rule of Law

- **Qatar:** As for USA is possible to observe a $\beta < 0$ with $p\text{-value} < 0,05$ for **WGI** Indicator and for **CPI**.

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Top 10	R^2	Africa	R^2	Other	R^2
Qatar	0.972	Sudan	0.982	China	0.993
Trinidad and Tobago	0.967	Zambia	0.948	Spain	0.983
USA	0.946	Cameroon	0.943	Norway	0.932
UAE	0.93	Kenya	0.908	Belgium	0.893
Australia	0.925	Algeria	0.89	Italy	0.83
Brunei Darussalam	0.912	Rwanda	0.858	Perù	0.73
Malaysia	0.899	South Africa	0.826		
Oman	0.86	Nigeria	0.818		
Indonesia	0.827	Tunisia	0.817		
Russia	0.79	Equatorial Guinea	0.768		
		Namibia	0.752		
		Ghana	0.748		
		Uganda	0.719		
		Mozambique	0.689		
		Egypt	0.65		
		Botswana	0.638		
		Libya	0.626		
		Tanzania	0.223		

Table 3.15: R^2 Results with WGI - Control of Corruption

WGI v6	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	3	3	3
GDP PC	1	7	5
PCOE	1	5	2
CPI	6	1	5
ER	3	2	1
VOL	1	6	14
N. IMP	1	7	3
WGI	1	3	2

Table 3.16: Aggregated p-values from Multivariate Linear Regressions Across Different States, WGI - Control of Corruption

3.1.4 Impact with Heritage Index

As it is possible to observe in Table 3.18, only for **Australia** it has been possible obtain a value β with $p - value < 0,01$ sensitive. From this regression emerge a $\beta < 0$, meaning that $\beta < 0$ for the **Heritage Index** indicator in relation to the export price of LNG suggests that an *increase* in economic freedom is associated with a *decrease* in the price of LNG. This inverse relationship highlights how a more open and competitive economic environment can improve efficiency, reduce costs, and increase competitiveness in the LNG market, leading to lower export prices.

For **Sudan** Regression is possible to observe a $\beta > 0$ with $p - value < 0,05$ sensitive for **Heritage** and for **Volume** indicator and with $p - value < 0,01$, $\beta < 0$ for **GDP PC**.

Top 10	R^2	Africa	R^2	Other	R^2
Trinidad and Tobago	0.968	Sudan	0.987	China	0.993
Qatar	0.963	Zambia	0.963	Spain	0.984
Australia	0.955	Cameroon	0.951	Norway	0.924
UAE	0.928	Kenya	0.912	Belgium	0.887
USA	0.906	Algeria	0.898	Italy	0.826
Brunei Darussalam	0.891	Rwanda	0.858	Perù	0.732
Indonesia	0.855	South Africa	0.820		
Oman	0.854	Tunisia	0.818		
Malaysia	0.814	Nigeria	0.809		
Russia	0.714	Equatorial Guinea	0.778		
		Namibia	0.738		
		Ghana	0.716		
		Uganda	0.695		
		Mozambique	0.66		
		Egypt	0.658		
		Libya	0.574		
		Botswana	0.486		
		Tanzania	0.226		

Table 3.17: R^2 Results with Heritage Index

HER	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	0	4	2
GDP PC	1	7	5
PCOE	2	3	2
CPI	4	0	2
ER	3	2	2
VOL	4	6	14
N. IMP	1	1	5
HER	2	1	1

Table 3.18: Aggregated p-values from Multivariate Linear Regressions Across Different States, Heritage Index

3.2 Discussion of Results

	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Intercept	2	3	3
GDP PC	1	6	5
PCOE	1	3	2
CPI	4	2	3
ER	2	4	2
VOL	2	6	14
N. IMP	1	4	5

Table 3.19: Aggregated p-values from Multivariate Linear Regressions Across Different States, Summary

Table 3.19, like the tables previously discussed for each regression, summarizes the results averaged over a sample of *34 countries* and shows which variables were the most significant in terms of p-value.

The primary finding is the significance of **LNG export volume** in relation to the export price of LNG. For almost all states, LNG volume was an explanatory variable. Regarding the dataset of **African states**, it is notable that nearly all states demonstrated a statistical significance between volume and export price. This supports the initial hypothesis of the thesis that the quantity of LNG produced and exported from Africa has exponentially increased over the past 20 years.

Subsequently, another variable that produced interesting results and proved to be generally significant is **GDP per Capita**. This indicates how the LNG market is growing and becoming increasingly impactful in the international hydrocarbon trade. Notably, the states that exhibited the highest statistical sensitivity for this variable include **Qatar, Trinidad and Tobago, Brunei Darussalam**, and **Indonesia**, which are among the top 10 LNG exporters globally. It can be assumed that the GDP per Capita variable yields statistically significant results because LNG is among the top five exported resources of these countries ³. Additionally, **Algeria**, a leader in African LNG production, also showed high significance.

Interesting results, particularly for the African countries dataset, were also observed for the independent variable of the **number of importers: Nigeria, Cameroon, Kenya, and Zambia** each showed significant statistical values in every regression. Moreover, countries such as **Trinidad and Tobago and Indonesia** also presented statistically significant results for this variable.

	p-value < 0.1 (*)	p-value < 0.05 (**)	p-value < 0.01 (***)
Caldara and Iacoviello	0	1	1
Political Stability	1	2	1
Voice and Accountability	0	1	2
Government Effectiveness	1	3	1
Regulatory Quality	2	2	1
Rule of Law	3	2	1
Control of Corruption	1	3	2
Heritage	2	1	1

Table 3.20: Aggregated p-values from Multivariate Linear Regressions with different Indexes, Summary

In the case of the regression by **Caldara and Iacoviello**, conducted on a sample of 12 countries, as possible to observe in Table⁴3.20, the obtained data is particularly interesting. Russia achieved a significance level of $p - value < 0,01$ for the Caldara and Iacoviello index variable, demonstrating the **positive** relationship between the increase in export prices and the geopolitical risk index. Furthermore, a **correlation analysis** shows a correlation of 0.91 between the two variables, supporting this phenomenon. Additionally, Australia, a historical leader in LNG exports, also shows statistical significance

³Looking at the export amount in dollars per country on trademap.org

⁴Sample for Caldara & Iacoviello $N = 12$, Sample for Other Regression $N = 34$

for the Caldara and Iacoviello geopolitical risk index concerning LNG export prices.

This indicates that the **increase** in geopolitical tensions definitively impacts LNG export prices, and the index created by Caldara and Iacoviello is a reliable source.

The **World Governance Indicators (WGI)** and **Heritage Index** did not capture particularly significant results. **Ghana** achieved statistically significant results with a $p - value < 0.01$ for the indicators of *Voice and Accountability* and *Government Effectiveness*, and with a $p - value < 0.05$ for the *Rule of Law* indicator. Correlation analysis shows that all three of these variables have a *low correlation* with LNG export prices.

Brunei Darussalam obtained significant results, with a $p - value < 0.01$, for the indicators of *Voice and Accountability* and *Government Effectiveness*. Regarding the *Control of Corruption* indicator, the **USA and Malaysia** achieved statistically relevant values.

Finally, concerning the *Heritage Index*, **Australia and Sudan** obtained statistically significant results respectively with $p - value < 0,01$ and $p - value < 0,05$.

3.3 Model Limitation and tips for future research

At the end of this thesis, the following limitations and tips for future research are highlighted:

Limitations

One of the primary limitations of this study was the complexity and time-consuming nature of creating the dataset. Obtaining export price data for some countries proved particularly challenging. Additionally, the dataset consists solely of annual data; having access to monthly data would have provided more detailed and timely information. For instance, in the context of analyzing geopolitical risk, such as using the Caldara and Iacoviello index, which is constructed on a daily basis; monthly or daily data would allow for a more accurate capture of price variations in response to short-term events, such as civil unrest in emerging countries that may only last a few months or days.

Another significant limitation is the absence of comprehensive Country Risk indices that analyze geopolitical risk for each country. The existing indices show low correlation with each other, and comparing the regression results from Caldara and Iacoviello with those obtained from the WGI and Heritage indicators reveals highly divergent outcomes. This discrepancy highlights the need for more consistent and granular geopolitical risk metrics.

Future Research Suggestions

Future research should aim to overcome these limitations by focusing on a few key areas.

Firstly, efforts should be made to compile more granular data, such as monthly or even daily export prices, to better align with high-frequency geopolitical risk indices. This would provide a more detailed understanding of how short-term geopolitical events affect LNG prices. The development of a more robust and comprehensive Country Risk index specifically tailored to assess geopolitical risk at the country level would be beneficial.

For future research, it would be beneficial to apply this analysis to other exported commodities for which more extensive data is available. This could provide broader insights and more robust results. Additionally, conducting a network analysis to map out and understand the flow of imports and exports could help identify which countries are most influenced by geopolitical risks and market changes.

Moreover, employing more sophisticated regression techniques and predictive analytics, could improve the accuracy and predictive power of the models. These methods could help account for multicollinearity among variables and provide more reliable forecasts of export price movements in response to various risk factors.

Conclusions

The ultimate goal of this thesis was to identify and understand the key variables influencing the export price of LNG, and to determine whether geopolitical risk could serve as an explanatory factor. Through comprehensive analysis and research, this study has aimed to shed light on the complexities surrounding LNG export pricing, providing valuable insights into the interplay between market dynamics and geopolitical influences.

Additionally, the thesis sought to explore whether different types of exporters could have varying impacts on the export price. To this end, the dataset included not only the top 10 global LNG exporters, who account for 70% of the total annual LNG exports, but also various African exporters. African exporters have been increasing their export volumes in recent years and now comprise the remaining 30% of the total annual LNG exports. This comprehensive approach allowed for a more nuanced understanding of the factors affecting LNG export prices across different exporter profiles.

To assess geopolitical risk variables, the study utilized the Geopolitical Risk Index (GPR) computed by Caldara and Iacoviello, the six World Governance Indicators (WGI) from the World Bank, and the Economic Freedom Index calculated by the Heritage Foundation. These indices provided a robust framework to evaluate the influence of geopolitical factors on LNG export pricing.

After conducting a descriptive statistical analysis of the main variables used in the model and applying multivariate linear regressions, it was observed that the primary predictive variables for LNG prices are the **Export Volume, GDP per Capita, and the number of importers for each country**. Including geopolitical risk indicators in the model, the GPR by Caldara and Iacoviello was found to most closely align with expected outcomes. Specifically, in the case of Russia, this index proved particularly explanatory, demonstrating how increases in export prices are driven by rising geopolitical risks.

Regarding the World Governance Indicators, Government Effectiveness and Rule of Law were the most significant. For some African countries, an in-

crease in export prices was linked to a decline or increase in these two indicators, highlighting the impact of governance quality on LNG pricing.

This model serves as a foundation for future research and could be significantly improved by incorporating a dataset with monthly or daily frequency data, as opposed to the currently used annual data. This enhancement would provide greater precision in estimates. Additionally, the model could benefit from the inclusion of country risk indicators, which have been increasingly developed and calculated in recent years.

The thesis has provided a deeper understanding of the complexities inherent in the export market for commodities and the intricacies of emerging markets such as those in Africa. It has demonstrated how chaotic the influence on export prices can be, revealing that these Export prices can depend on a multitude of different factors that must be considered individually.

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Appendix A

Table and Plot

Index of Variable	
GNL	Liquefied Natural Gas Price - HS6: 271111
GDP PC	Gross Domestic Product per Capita
PCOE	Product Concentration Index on Export
CPI	Consumer Price Index
ER	Exchange Rate
VOL	Volume of Export of GNL
N. IMP	Number of Importer which import more than 1% of total export
GPR C&I	Geopolitical Risk Index by Caldara e Iacoviello
WGI v1	World Governance Indicator - Political Stability and Absence of Violence/Terrorism
WGI v2	World Governance Indicator - Voice and Accountability
WGI v3	World Governance Indicator - Government Effectiveness
WGI v4	World Governance Indicator - Regulatory Quality
WGI v5	World Governance Indicator - Rule of Law
WGI v6	World Governance Indicator - Control of Corruption
HER	Heritage - Index of Economic Freedom

Standard Errors are in parentheses

*** p-value is < 0.01
** p-value is < 0.05
* p-value is < 0.1

Table A.1: Variable Description

A.1 Caldara and Iacoviello

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	-0.070 x10e9 (0.17 x10e9)	-0.050 x10e9 (0.14 x10e9)	-0.080 x10e9 (0.18 x10e9)	0.420 x10e9 (0.26 x10e9)	-0.050 x10e9 (0.18 x10e9)	-0.080 x10e9 (0.2 x10e9)	0.270 x10e9 (0.3 x10e9)	-0.070 x10e9 (0.2 x10e9)	0.110 x10e9 (0.15 x10e9)
GDP PC	0.130 x10e3 (0.23 x10e3)	0.110 x10e3 (0.19 x10e3)	0.180 x10e3 (0.26 x10e3)	0.41* x10e3 (0.24 x10e3)	0.180 x10e3 (0.29 x10e3)	0.110 x10e3 (0.28 x10e3)	0.220 x10e3 (0.23 x10e3)	0.120 x10e3 (0.28 x10e3)	0.49** x10e3 (0.21 x10e3)
PCOE	0.310 x10e8 (0.52 x10e8)	0.340 x10e8 (0.44 x10e8)	0.290 x10e8 (0.53 x10e8)	-0.010 x10e9 (0.5 x10e8)	0.270 x10e8 (0.56 x10e8)	0.320 x10e8 (0.54 x10e8)	0.650 x10e7 (0.54 x10e8)	0.320 x10e8 (0.55 x10e8)	0.92* x10e8 (0.45 x10e8)
CPI	0.28*** x10e7 (0.82 x10e6)	0.19** x10e7 (0.77 x10e6)	0.26*** x10e7 (0.89 x10e6)	0.32*** x10e7 (0.75 x10e6)	0.28*** x10e7 (0.88 x10e6)	0.28*** x10e7 (0.86 x10e6)	0.25*** x10e7 (0.83 x10e6)	0.28*** x10e7 (0.88 x10e6)	0.840 x10e6 (0.89 x10e6)
ER	0.790 x10e7 (0.12 x10e8)	0.230 x10e7 (0.1 x10e8)	0.110 x10e8 (0.14 x10e8)	0.790 x10e7 (0.11 x10e8)	0.10 x10e8 (0.15 x10e8)	0.720 x10e7 (0.14 x10e8)	0.340 x10e7 (0.12 x10e8)	0.760 x10e7 (0.14 x10e8)	0.19* x10e8 (0.1 x10e8)
VOL	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)
N. IMP	0.120 x10e8 (0.58 x10e8)	0.690 x10e7 (0.49 x10e8)	0.10 x10e8 (0.6 x10e8)	-0.020 x10e9 (0.53 x10e8)	0.150 x10e8 (0.61 x10e8)	0.120 x10e8 (0.6 x10e8)	-0.030 x10e9 (0.63 x10e8)	0.120 x10e8 (0.6 x10e8)	0.330 x10e8 (0.47 x10e8)
GPR C&I		0.72** x10e8 (0.26 x10e8)							
WGI v 1			0.120 x10e6 (0.26 x10e6)						
WGI v 2				-0.04** x10e8 (0.18 x10e7)					
WGI v 3					-0.030 x10e7 (0.11 x10e7)				
WGI v 4						0.110 x10e6 (0.92 x10e6)			
WGI v 5							-0.020 x10e8 (0.17 x10e7)		
WGI v 6								0.660 x10e5 (0.11 x10e7)	
HER									-0.04*** x10e8 (0.11 x10e7)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	4878.95	4117.84	5005.00	4333.69	5027.24	5036.34	4758.78	5038.39	3879.23
R2	0.925	0.950	0.926	0.944	0.925	0.925	0.933	0.925	0.955
adj R2	0.896	0.926	0.891	0.918	0.890	0.889	0.901	0.889	0.934

Table A.2: Australia; Regression

	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.65	0.80	0.17	-0.28	0.93	-0.15	0.67	-0.18	-0.43	-0.25	0.66	-0.81	-0.04	0.18
GDP PC	0.65	1	0.89	-0.18	-0.72	0.63	-0.03	0.18	-0.41	0.15	0.12	0.84	-0.35	0.31	0.77
PCOE	0.80	0.89	1	-0.13	-0.50	0.80	-0.21	0.33	-0.37	-0.16	-0.11	0.82	-0.59	0.11	0.67
CPI	0.17	-0.18	-0.13	1	0.15	-0.04	-0.07	0.35	0.33	0.06	0.06	-0.20	-0.11	0.09	-0.50
ER	-0.28	-0.72	-0.50	0.15	1	-0.29	0.09	0.09	0.02	-0.34	0.06	-0.43	-0.07	-0.11	-0.48
VOL	0.93	0.63	0.80	-0.04	-0.29	1	-0.16	0.52	-0.22	-0.43	-0.35	0.66	-0.80	-0.16	0.25
N. IMP	-0.15	-0.03	-0.21	-0.07	0.09	-0.16	1	-0.06	-0.08	0.03	0.40	-0.06	-0.04	0.17	0.06
GPR C&I	0.67	0.18	0.33	0.35	0.09	0.52	-0.06	1	-0.24	-0.45	-0.19	0.22	-0.59	-0.04	-0.31
WGI v1	-0.18	-0.41	-0.37	0.33	0.02	-0.22	-0.08	-0.24	1	-0.10	-0.46	-0.45	0.25	-0.52	-0.47
WGI v2	-0.43	0.15	-0.16	0.06	-0.34	-0.43	0.03	-0.45	-0.10	1	0.50	-0.03	0.49	0.34	0.26
WGI v3	-0.25	0.12	-0.11	0.06	0.06	-0.35	0.40	-0.19	-0.46	0.50	1	0.17	0.23	0.77	0.26
WGI v4	0.66	0.84	0.82	-0.20	-0.43	0.66	-0.06	0.22	-0.45	-0.03	0.17	1	-0.48	0.40	0.66
WGI v5	-0.81	-0.35	-0.59	-0.11	-0.07	-0.80	-0.04	-0.59	0.25	0.49	0.23	-0.48	1	0.16	-0.06
WGI v6	-0.04	0.31	0.11	0.09	-0.11	-0.16	0.17	-0.04	-0.52	0.34	0.77	0.40	0.16	1	0.36
HER	0.18	0.77	0.67	-0.50	-0.48	0.25	0.06	-0.31	-0.47	0.26	0.26	0.66	-0.06	0.36	1

Table A.3: Australia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	0.630 x10e6 (0.23 x10e8)	-0.030 x10e8 (0.82 x10e7)	0.170 x10e8 (0.25 x10e8)	0.350 x10e8 (0.34 x10e8)	0.120 x10e8 (0.23 x10e8)	0.550 x10e7 (0.23 x10e8)	-0.030 x10e8 (0.21 x10e8)	-0.020 x10e9 (0.22 x10e8)	0.240 x10e8 (0.49 x10e8)
GDP PC	0.12* x10e4 (0.62 x10e3)	0.270 x10e3 (0.24 x10e3)	0.14** x10e4 (0.61 x10e3)	0.720 x10e3 (0.7 x10e3)	0.860 x10e3 (0.62 x10e3)	0.640 x10e3 (0.73 x10e3)	0.560 x10e3 (0.66 x10e3)	0.18*** x10e4 (0.59 x10e3)	0.12* x10e4 (0.64 x10e3)
PCOE	-0.050 x10e9 (0.66 x10e8)	-0.050 x10e8 (0.24 x10e8)	-0.070 x10e9 (0.66 x10e8)	-0.080 x10e9 (0.67 x10e8)	-0.040 x10e9 (0.62 x10e8)	-0.080 x10e8 (0.71 x10e8)	0.180 x10e8 (0.69 x10e8)	-0.050 x10e9 (0.58 x10e8)	-0.070 x10e9 (0.74 x10e8)
CPI	0.67** x10e6 (0.27 x10e6)	0.110 x10e6 (0.11 x10e6)	0.490 x10e6 (0.29 x10e6)	0.7** x10e6 (0.26 x10e6)	0.420 x10e6 (0.29 x10e6)	0.430 x10e6 (0.31 x10e6)	0.53* x10e6 (0.26 x10e6)	0.79*** x10e6 (0.24 x10e6)	0.58* x10e6 (0.32 x10e6)
ER	-0.040 x10e6 (0.12 x10e6)	-0.01** x10e7 (0.44 x10e5)	-0.090 x10e6 (0.12 x10e6)	-0.020 x10e7 (0.16 x10e6)	0.230 x10e5 (0.12 x10e6)	-0.060 x10e6 (0.12 x10e6)	-0.020 x10e6 (0.11 x10e6)	-0.060 x10e6 (0.11 x10e6)	-0.040 x10e6 (0.13 x10e6)
VOL	00 x10 (0 x10)	0** x10 (0 x10)	00 x10e2 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10e2 (0 x10)	00 x10 (0 x10)
N. IMP	0.870 x10e6 (0.67 x10e6)	0.690 x10e5 (0.25 x10e6)	0.110 x10e7 (0.67 x10e6)	0.50 x10e6 (0.7 x10e6)	0.590 x10e6 (0.65 x10e6)	0.530 x10e6 (0.69 x10e6)	0.480 x10e4 (0.75 x10e6)	0.1* x10e7 (0.59 x10e6)	0.10 x10e7 (0.74 x10e6)
GPR C&I		0.85*** x10e7 (0.8 x10e6)							
WGI v 1			-0.030 x10e7 (0.23 x10e6)						
WGI v 2				-0.060 x10e7 (0.44 x10e6)					
WGI v 3					-0.030 x10e7 (0.18 x10e6)				
WGI v 4						-0.030 x10e7 (0.19 x10e6)			
WGI v 5							-0.06* x10e7 (0.32 x10e6)		
WGI v 6								0.7** x10e6 (0.29 x10e6)	
HER									-0.030 x10e7 (0.61 x10e6)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	4217.73	1489.83	4089.03	4103.19	3979.83	4095.65	3871.80	3696.54	4314.29
R2	0.708	0.966	0.743	0.741	0.756	0.742	0.770	0.790	0.714
adj R2	0.599	0.950	0.623	0.620	0.643	0.622	0.662	0.692	0.580

Table A.4: Russia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.53	-0.20	-0.14	0.54	0.70	0.67	0.91	0.11	-0.55	-0.23	-0.76	-0.27	0.03	0.43
GDP PC	0.53	1	0.43	-0.66	0.49	0.62	0.45	0.32	0.39	-0.86	0.10	-0.38	0.27	-0.51	0.30
PCOE	-0.20	0.43	1	-0.18	-0.46	-0.35	-0.39	-0.24	-0.05	-0.20	-0.18	0.41	0.32	-0.53	-0.55
CPI	-0.14	-0.66	-0.18	1	-0.58	-0.55	-0.47	0.02	-0.54	0.73	-0.53	0.05	-0.37	0.12	-0.54
ER	0.54	0.49	-0.46	-0.58	1	0.87	0.80	0.44	0.38	-0.72	0.45	-0.61	0.05	0.09	0.81
VOL	0.70	0.62	-0.35	-0.55	0.87	1	0.92	0.47	0.46	-0.68	0.28	-0.64	0.13	-0.01	0.80
N. IMP	0.67	0.45	-0.39	-0.47	0.80	0.92	1	0.49	0.47	-0.61	0.23	-0.63	-0.06	0.05	0.82
GPR C&I	0.91	0.32	-0.24	0.02	0.44	0.47	0.49	1	0.02	-0.42	-0.23	-0.75	-0.39	0.12	0.28
WGI v1	0.11	0.39	-0.05	-0.54	0.38	0.46	0.47	0.02	1	-0.38	0.57	-0.23	0.25	-0.17	0.43
WGI v2	-0.55	-0.86	-0.20	0.73	-0.72	-0.68	-0.61	-0.42	-0.38	1	-0.26	0.44	-0.07	0.33	-0.48
WGI v3	-0.23	0.10	-0.18	-0.53	0.45	0.28	0.23	-0.23	0.57	-0.26	1	0.13	0.27	0.16	0.49
WGI v4	-0.76	-0.38	0.41	0.05	-0.61	-0.64	-0.63	-0.75	-0.23	0.44	0.13	1	0.20	0.04	-0.51
WGI v5	-0.27	0.27	0.32	-0.37	0.05	0.13	-0.06	-0.39	0.25	-0.07	0.27	0.20	1	-0.33	-0.09
WGI v6	0.03	-0.51	-0.53	0.12	0.09	-0.01	0.05	0.12	-0.17	0.33	0.16	0.04	-0.33	1	0.25
HER	0.43	0.30	-0.55	-0.54	0.81	0.80	0.82	0.28	0.43	-0.48	0.49	-0.51	-0.09	0.25	1

Table A.5: Russia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intecept)	-0.020 x10e9 (0.18 x10e8)	-0.04* x10e9 (0.2 x10e8)	-0.010 x10e9 (0.2 x10e8)	0.710 x10e7 (0.7 x10e8)	0.13* x10e9 (0.73 x10e8)	0.40 x10e8 (0.65 x10e8)	-0.060 x10e9 (0.16 x10e9)	0.98** x10e8 (0.39 x10e8)	-0.010 x10e9 (0.75 x10e8)
GDP PC	0.67** x10e3 (0.24 x10e3)	0.59** x10e3 (0.23 x10e3)	0.75*** x10e3 (0.25 x10e3)	0.570 x10e3 (0.35 x10e3)	0.410 x10e3 (0.25 x10e3)	0.470 x10e3 (0.32 x10e3)	0.69** x10e3 (0.26 x10e3)	0.66*** x10e3 (0.19 x10e3)	0.66** x10e3 (0.27 x10e3)
PCOE	0.290 x10e8 (0.17 x10e9)	0.960 x10e8 (0.17 x10e9)	-0.070 x10e8 (0.17 x10e9)	0.290 x10e8 (0.18 x10e9)	0.380 x10e8 (0.16 x10e9)	0.460 x10e7 (0.17 x10e9)	0.650 x10e8 (0.22 x10e9)	0.290 x10e8 (0.14 x10e9)	0.190 x10e8 (0.2 x10e9)
CPI	0.32*** x10e7 (0.63 x10e6)	0.32*** x10e7 (0.59 x10e6)	0.31*** x10e7 (0.64 x10e6)	0.33*** x10e7 (0.65 x10e6)	0.34*** x10e7 (0.58 x10e6)	0.38*** x10e7 (0.87 x10e6)	0.33*** x10e7 (0.65 x10e6)	0.34*** x10e7 (0.49 x10e6)	0.32*** x10e7 (0.67 x10e6)
ER	-0.010 x10e9 (0.9 x10e7)	-0.080 x10e8 (0.94 x10e7)	-0.02* x10e9 (0.93 x10e7)	-0.010 x10e9 (0.93 x10e7)	-0.050 x10e8 (0.94 x10e7)	-0.010 x10e9 (0.91 x10e7)	-0.010 x10e9 (0.1 x10e8)	-0.02*** x10e9 (0.75 x10e7)	-0.010 x10e9 (0.98 x10e7)
VOL	0* x10 (0 x10)	0* x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	0* x10 (0 x10)
N. IMP	-0.050 x10e7 (0.34 x10e6)	-0.050 x10e7 (0.32 x10e6)	-0.060 x10e7 (0.34 x10e6)	-0.050 x10e7 (0.35 x10e6)	-0.060 x10e6 (0.37 x10e6)	-0.020 x10e7 (0.43 x10e6)	-0.050 x10e7 (0.36 x10e6)	-0.06** x10e7 (0.27 x10e6)	-0.050 x10e7 (0.35 x10e6)
GPR C&I		0.220 x10e7 (0.13 x10e7)							
WGI v 1			-0.010 x10e7 (0.97 x10e5)						
WGI v 2				-0.030 x10e7 (0.64 x10e6)					
WGI v 3					-0.02* x10e8 (0.8 x10e6)				
WGI v 4						-0.060 x10e7 (0.59 x10e6)			
WGI v 5							0.40 x10e6 (0.15 x10e7)		
WGI v 6								-0.01*** x10e8 (0.35 x10e6)	
HER									-0.080 x10e6 (0.79 x10e6)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	3995.32	3762.10	3958.84	4102.94	3627.82	3998.77	4116.83	3137.32	4124.92
R2	0.906	0.922	0.914	0.907	0.928	0.912	0.907	0.946	0.906
adj R2	0.871	0.886	0.873	0.864	0.894	0.871	0.863	0.921	0.863

Table A.6: USA; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.75	0.18	0.72	-0.24	0.75	0.72	0.11	-0.43	-0.75	-0.67	-0.15	-0.64	-0.65	-0.62
GDP PC	0.75	1	0.41	0.30	0.06	0.73	0.86	-0.19	-0.30	-0.94	-0.52	-0.49	-0.84	-0.74	-0.69
PCOE	0.18	0.41	1	-0.15	-0.37	0.09	0.41	-0.02	-0.01	-0.31	-0.18	-0.34	-0.45	-0.12	-0.70
CPI	0.72	0.30	-0.15	1	-0.14	0.33	0.29	0.15	-0.26	-0.27	-0.20	0.39	-0.18	-0.17	-0.27
ER	-0.24	0.06	-0.37	-0.14	1	-0.22	-0.25	-0.34	0.01	-0.01	0.34	-0.19	-0.02	-0.19	0.39
VOL	0.75	0.73	0.09	0.33	-0.22	1	0.85	-0.18	-0.45	-0.84	-0.69	-0.29	-0.75	-0.71	-0.49
N. IMP	0.72	0.86	0.41	0.29	-0.25	0.85	1	-0.14	-0.39	-0.87	-0.50	-0.25	-0.76	-0.70	-0.67
GPR C&I	0.11	-0.19	-0.02	0.15	-0.34	-0.18	-0.14	1	-0.46	0.28	-0.19	0.16	0.19	0.31	0.02
WGI v1	-0.43	-0.30	-0.01	-0.26	0.01	-0.45	-0.39	-0.46	1	0.27	0.37	-0.05	0.40	0.20	0.07
WGI v2	-0.75	-0.94	-0.31	-0.27	-0.01	-0.84	-0.87	0.28	0.27	1	0.57	0.47	0.85	0.81	0.62
WGI v3	-0.67	-0.52	-0.18	-0.20	0.34	-0.69	-0.50	-0.19	0.37	0.57	1	0.42	0.58	0.53	0.50
WGI v4	-0.15	-0.49	-0.34	0.39	-0.19	-0.29	-0.25	0.16	-0.05	0.47	0.42	1	0.56	0.47	0.42
WGI v5	-0.64	-0.84	-0.45	-0.18	-0.02	-0.75	-0.76	0.19	0.40	0.85	0.58	0.56	1	0.66	0.61
WGI v6	-0.65	-0.74	-0.12	-0.17	-0.19	-0.71	-0.70	0.31	0.20	0.81	0.53	0.47	0.66	1	0.47
HER	-0.62	-0.69	-0.70	-0.27	0.39	-0.49	-0.67	0.02	0.07	0.62	0.50	0.42	0.61	0.47	1

Table A.7: USA; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	0.180 x10e8 (0.11 x10e8)	0.190 x10e8 (0.11 x10e8)	0.220 x10e8 (0.13 x10e8)	0.160 x10e8 (0.11 x10e8)	-0.050 x10e8 (0.19 x10e8)	0.41** x10e8 (0.16 x10e8)	0.720 x10e7 (0.15 x10e8)	-0.03* x10e9 (0.14 x10e8)	0.29** x10e8 (0.13 x10e8)
GDP PC	0.390 x10e4 (0.11 x10e5)	0.570 x10e4 (0.12 x10e5)	0.180 x10e4 (0.12 x10e5)	0.110 x10e5 (0.15 x10e5)	0.460 x10e4 (0.11 x10e5)	-0.020 x10e5 (0.11 x10e5)	0.340 x10e4 (0.11 x10e5)	0.3** x10e5 (0.1 x10e5)	0.10 x10e5 (0.12 x10e5)
PCOE	-0.060 x10e9 (0.48 x10e8)	-0.070 x10e9 (0.52 x10e8)	-0.060 x10e9 (0.51 x10e8)	-0.080 x10e9 (0.53 x10e8)	-0.09* x10e9 (0.5 x10e8)	-0.10 x10e8 (0.53 x10e8)	-0.090 x10e9 (0.53 x10e8)	#REF! (0.41 x10e8)	-0.030 x10e9 (0.53 x10e8)
CPI	0.190 x10e6 (0.56 x10e6)	0.180 x10e6 (0.58 x10e6)	0.270 x10e6 (0.59 x10e6)	0.110 x10e6 (0.58 x10e6)	0.150 x10e6 (0.54 x10e6)	0.180 x10e6 (0.52 x10e6)	0.320 x10e6 (0.57 x10e6)	0.83* x10e6 (0.43 x10e6)	-0.060 x10e6 (0.57 x10e6)
ER	-0.06*** x10e8 (0.2 x10e7)	-0.06*** x10e8 (0.21 x10e7)	-0.07*** x10e8 (0.2 x10e7)	-0.06** x10e8 (0.21 x10e7)	-0.07*** x10e8 (0.2 x10e7)	-0.1*** x10e8 (0.25 x10e7)	-0.06*** x10e8 (0.2 x10e7)	-0.090 x10e7 (0.2 x10e7)	-0.07*** x10e8 (0.2 x10e7)
VOL	0** x10 (0 x10)	0* x10 (0 x10)	0** x10 (0 x10)	0** x10 (0 x10)	0** x10 (0 x10)	0*** x10 (0 x10)	0* x10 (0 x10)	00 x10 (0 x10)	0** x10 (0 x10)
N. IMP	0.240 x10e6 (0.18 x10e7)	0.390 x10e6 (0.19 x10e7)	0.380 x10e6 (0.19 x10e7)	-0.090 x10e7 (0.24 x10e7)	0.120 x10e7 (0.19 x10e7)	0.230 x10e6 (0.17 x10e7)	0.430 x10e6 (0.18 x10e7)	0.110 x10e7 (0.13 x10e7)	-0.060 x10e7 (0.19 x10e7)
GPR C&I		0.150 x10e8 (0.24 x10e8)							
WGI v 1			-0.080 x10e6 (0.13 x10e6)						
WGI v 2				0.20 x10e6 (0.25 x10e6)					
WGI v 3					0.360 x10e6 (0.24 x10e6)				
WGI v 4						-0.05* x10e7 (0.25 x10e6)			
WGI v 5							0.30 x10e6 (0.29 x10e6)		
WGI v 6								0.83*** x10e6 (0.2 x10e6)	
HER									-0.040 x10e7 (0.25 x10e6)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	2816.18	2872.15	2873.89	2848.09	2708.89	2613.83	2807.00	2006.84	2728.92
R2	0.789	0.794	0.794	0.797	0.817	0.829	0.803	0.899	0.814
adj R2	0.709	0.698	0.697	0.703	0.731	0.750	0.711	0.852	0.727

Table A.8: Malaysia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.49	-0.46	0.32	0.15	0.71	0.32	0.03	-0.47	-0.01	-0.24	0.30	0.35	0.00	0.33
GDP PC	0.49	1	0.26	-0.09	0.46	0.76	0.85	-0.13	-0.38	0.32	-0.32	0.56	0.70	-0.37	0.83
PCOE	-0.46	0.26	1	-0.49	0.00	-0.20	0.46	0.14	0.31	0.61	0.17	0.32	0.41	0.26	0.32
CPI	0.32	-0.09	-0.49	1	0.15	0.24	-0.24	0.03	-0.03	-0.24	0.05	-0.08	-0.21	-0.30	-0.17
ER	0.15	0.46	0.00	0.15	1	0.69	0.50	-0.19	-0.25	0.20	-0.01	0.05	0.38	-0.55	0.41
VOL	0.71	0.76	-0.20	0.24	0.69	1	0.68	-0.10	-0.45	0.21	-0.32	0.50	0.57	-0.39	0.69
N. IMP	0.32	0.85	0.46	-0.24	0.50	0.68	1	-0.07	-0.20	0.66	-0.32	0.61	0.72	-0.20	0.75
GPR C&I	0.03	-0.13	0.14	0.03	-0.19	-0.10	-0.07	1	0.45	-0.04	0.19	0.45	0.40	0.38	0.11
WGI v1	-0.47	-0.38	0.31	-0.03	-0.25	-0.45	-0.20	0.45	1	0.28	0.36	0.17	0.12	0.42	-0.33
WGI v2	-0.01	0.32	0.61	-0.24	0.20	0.21	0.66	-0.04	0.28	1	0.00	0.41	0.49	0.26	0.29
WGI v3	-0.24	-0.32	0.17	0.05	-0.01	-0.32	-0.32	0.19	0.36	0.00	1	-0.14	-0.02	0.37	-0.36
WGI v4	0.30	0.56	0.32	-0.08	0.05	0.50	0.61	0.45	0.17	0.41	-0.14	1	0.74	0.16	0.69
WGI v5	0.35	0.70	0.41	-0.21	0.38	0.57	0.72	0.40	0.12	0.49	-0.02	0.74	1	0.14	0.68
WGI v6	0.00	-0.37	0.26	-0.30	-0.55	-0.39	-0.20	0.38	0.42	0.26	0.37	0.16	0.14	1	-0.30
HER	0.33	0.83	0.32	-0.17	0.41	0.69	0.75	0.11	-0.33	0.29	-0.36	0.69	0.68	-0.30	1

Table A.9: Malaysia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intecept)	-0.09* x10e11 (0.5 x10e10)	-0.1* x10e11 (0.53 x10e10)	-0.01* x10e12 (0.57 x10e10)	-0.01* x10e12 (0.61 x10e10)	-0.010 x10e12 (0.78 x10e10)	-0.010 x10e12 (0.66 x10e10)	-0.010 x10e12 (0.82 x10e10)	-0.010 x10e12 (0.92 x10e10)	0.90 x10e10 (0.21 x10e11)
GDP PC	0.840 x10e6 (0.76 x10e6)	0.750 x10e6 (0.8 x10e6)	0.150 x10e7 (0.94 x10e6)	0.10 x10e7 (0.81 x10e6)	0.120 x10e7 (0.1 x10e7)	0.870 x10e6 (0.8 x10e6)	0.150 x10e7 (0.11 x10e7)	0.110 x10e7 (0.88 x10e6)	0.660 x10e6 (0.79 x10e6)
PCOE	0.340 x10e11 (0.2 x10e11)	0.330 x10e11 (0.2 x10e11)	0.35* x10e11 (0.2 x10e11)	0.330 x10e11 (0.2 x10e11)	0.380 x10e11 (0.22 x10e11)	0.350 x10e11 (0.21 x10e11)	0.41* x10e11 (0.22 x10e11)	0.42* x10e11 (0.24 x10e11)	0.190 x10e11 (0.26 x10e11)
CPI	-0.090 x10e8 (0.1 x10e9)	-0.020 x10e9 (0.11 x10e9)	0.170 x10e8 (0.1 x10e9)	-0.060 x10e8 (0.1 x10e9)	-0.070 x10e6 (0.11 x10e9)	-0.010 x10e9 (0.11 x10e9)	0.250 x10e8 (0.11 x10e9)	-0.030 x10e9 (0.11 x10e9)	-0.010 x10e9 (0.1 x10e9)
ER	0.19* x10e9 (0.1 x10e9)	0.230 x10e9 (0.13 x10e9)	0.150 x10e9 (0.11 x10e9)	0.26* x10e9 (0.14 x10e9)	0.180 x10e9 (0.11 x10e9)	0.220 x10e9 (0.14 x10e9)	0.140 x10e9 (0.12 x10e9)	0.22* x10e9 (0.11 x10e9)	0.780 x10e8 (0.16 x10e9)
VOL	0.040 x10 (0.02 x10)	0.040 x10 (0.02 x10)	0.020 x10 (0.02 x10)	0.05* x10 (0.02 x10)	0.030 x10 (0.02 x10)	0.030 x10 (0.03 x10)	0.020 x10 (0.03 x10)	0.04* x10 (0.02 x10)	0.04* x10 (0.02 x10)
N. IMP	-0.070 x10e8 (0.13 x10e9)	-0.030 x10e9 (0.14 x10e9)	0.50 x10e8 (0.13 x10e9)	-0.050 x10e9 (0.14 x10e9)	-0.080 x10e8 (0.13 x10e9)	-0.090 x10e8 (0.13 x10e9)	0.120 x10e8 (0.13 x10e9)	-0.020 x10e9 (0.13 x10e9)	0.140 x10e8 (0.13 x10e9)
GPR C&I		0.310 x10e10 (0.57 x10e10)							
WGI v 1			0.110 x10e9 (0.89 x10e8)						
WGI v 2				0.110 x10e9 (0.14 x10e9)					
WGI v 3					0.420 x10e8 (0.84 x10e8)				
WGI v 4						0.290 x10e8 (0.89 x10e8)			
WGI v 5							0.720 x10e8 (0.85 x10e8)		
WGI v 6								0.950 x10e8 (0.14 x10e9)	
HER									-0.030 x10e10 (0.3 x10e9)
N	20	20	20	20	20	20	20	20	20
df	13	12	12	12	12	12	12	12	12
RMSE	16715.80	17181.82	16447.73	16948.85	17215.14	17320.79	16907.14	17061.91	16862.64
R2	0.636	0.645	0.675	0.655	0.644	0.640	0.657	0.650	0.658
adj R2	0.468	0.438	0.485	0.454	0.436	0.429	0.456	0.446	0.459

Table A.10: Egypt; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.29	0.29	-0.19	0.26	0.60	0.55	-0.17	0.17	-0.33	0.05	0.19	0.20	-0.49	-0.30
GDP PC	0.29	1	-0.56	-0.04	0.50	0.05	0.50	0.02	-0.70	-0.53	-0.59	-0.27	-0.61	-0.35	-0.18
PCOE	0.29	-0.56	1	-0.44	-0.46	0.36	-0.11	-0.03	0.59	0.29	0.26	0.40	0.42	-0.34	-0.06
CPI	-0.19	-0.04	-0.44	1	0.35	-0.18	0.11	-0.03	-0.19	-0.13	0.08	-0.20	-0.10	0.42	-0.05
ER	0.26	0.50	-0.46	0.35	1	-0.18	0.35	-0.38	-0.41	-0.66	-0.23	-0.66	-0.22	-0.20	-0.67
VOL	0.60	0.05	0.36	-0.18	-0.18	1	0.63	-0.16	0.37	-0.21	0.31	0.70	0.42	-0.41	0.29
N. IMP	0.55	0.50	-0.11	0.11	0.35	0.63	1	-0.05	-0.23	-0.39	-0.04	0.20	-0.05	-0.35	0.00
GPR C&I	-0.17	0.02	-0.03	-0.03	-0.38	-0.16	-0.05	1	-0.43	0.42	-0.20	0.13	-0.38	0.26	0.36
WGI v1	0.17	-0.70	0.59	-0.19	-0.41	0.37	-0.23	-0.43	1	0.16	0.76	0.57	0.89	-0.05	0.20
WGI v2	-0.33	-0.53	0.29	-0.13	-0.66	-0.21	-0.39	0.42	0.16	1	0.02	0.21	0.10	0.52	0.39
WGI v3	0.05	-0.59	0.26	0.08	-0.23	0.31	-0.04	-0.20	0.76	0.02	1	0.48	0.91	-0.01	0.35
WGI v4	0.19	-0.27	0.40	-0.20	-0.66	0.70	0.20	0.13	0.57	0.21	0.48	1	0.52	-0.14	0.69
WGI v5	0.20	-0.61	0.42	-0.10	-0.22	0.42	-0.05	-0.38	0.89	0.10	0.91	0.52	1	-0.08	0.27
WGI v6	-0.49	-0.35	-0.34	0.42	-0.20	-0.41	-0.35	0.26	-0.05	0.52	-0.01	-0.14	-0.08	1	0.15
HER	-0.30	-0.18	-0.06	-0.05	-0.67	0.29	0.00	0.36	0.20	0.39	0.35	0.69	0.27	0.15	1

Table A.11: Egypt; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	0.10 x10e8 (0.59 x10e7)	0.840 x10e7 (0.74 x10e7)	0.960 x10e7 (0.8 x10e7)	-0.020 x10e9 (0.47 x10e8)	-0.010 x10e9 (0.29 x10e8)	0.960 x10e7 (0.19 x10e8)	-0.040 x10e8 (0.16 x10e8)	-0.050 x10e8 (0.21 x10e8)	0.160 x10e8 (0.31 x10e8)
GDP PC	0.890 x10e3 (0.56 x10e3)	0.10 x10e4 (0.65 x10e3)	0.860 x10e3 (0.65 x10e3)	0.120 x10e4 (0.77 x10e3)	0.140 x10e4 (0.84 x10e3)	0.890 x10e3 (0.64 x10e3)	0.12* x10e4 (0.64 x10e3)	0.130 x10e4 (0.76 x10e3)	0.880 x10e3 (0.59 x10e3)
PCOE	-0.040 x10e9 (0.44 x10e8)	-0.040 x10e9 (0.47 x10e8)	-0.040 x10e9 (0.48 x10e8)	-0.050 x10e9 (0.48 x10e8)	-0.020 x10e9 (0.49 x10e8)	-0.040 x10e9 (0.46 x10e8)	-0.050 x10e9 (0.48 x10e8)	-0.040 x10e9 (0.45 x10e8)	-0.040 x10e9 (0.47 x10e8)
CPI	0.230 x10e6 (0.29 x10e6)	0.20 x10e6 (0.31 x10e6)	0.230 x10e6 (0.3 x10e6)	0.490 x10e6 (0.53 x10e6)	0.240 x10e6 (0.3 x10e6)	0.230 x10e6 (0.31 x10e6)	0.820 x10e4 (0.38 x10e6)	0.350 x10e6 (0.34 x10e6)	0.230 x10e6 (0.3 x10e6)
ER	-0.050 x10e7 (0.3 x10e6)	-0.040 x10e7 (0.35 x10e6)	-0.050 x10e7 (0.32 x10e6)	-0.050 x10e7 (0.31 x10e6)	-0.020 x10e7 (0.48 x10e6)	-0.050 x10e7 (0.5 x10e6)	-0.10 x10e6 (0.51 x10e6)	-0.030 x10e7 (0.42 x10e6)	-0.050 x10e7 (0.35 x10e6)
VOL	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.06** x10 (0.02 x10)	0.08*** x10 (0.02 x10)	0.08*** x10 (0.02 x10)
N. IMP	-0.01** x10e8 (0.43 x10e6)	-0.1** x10e7 (0.45 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.01** x10e8 (0.46 x10e6)	-0.1** x10e7 (0.43 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.09* x10e7 (0.45 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.1* x10e7 (0.46 x10e6)
GPR C&I		0.210 x10e8 (0.53 x10e8)							
WGI v 1			0.10 x10e5 (0.11 x10e6)						
WGI v 2				0.390 x10e6 (0.66 x10e6)					
WGI v 3					0.240 x10e6 (0.29 x10e6)				
WGI v 4						0.550 x10e4 (0.2 x10e6)			
WGI v 5							0.230 x10e6 (0.25 x10e6)		
WGI v 6								0.170 x10e6 (0.24 x10e6)	
HER									-0.090 x10e6 (0.44 x10e6)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	24.71	25.39	25.52	25.23	24.94	25.52	24.82	25.09	25.49
R2	0.820	0.822	0.820	0.824	0.828	0.820	0.829	0.826	0.820
adj R2	0.752	0.738	0.736	0.742	0.748	0.736	0.750	0.745	0.736

Table A.12: South Africa; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.68	0.48	-0.19	0.25	0.76	-0.53	-0.22	0.03	-0.06	-0.52	-0.38	0.33	-0.57	-0.39
GDP PC	0.68	1	0.62	-0.16	0.12	0.49	-0.46	-0.36	0.17	-0.34	-0.65	-0.39	0.11	-0.62	-0.37
PCOE	0.48	0.62	1	-0.10	0.67	0.62	-0.61	-0.32	-0.44	0.08	-0.89	-0.79	-0.12	-0.81	-0.76
CPI	-0.19	-0.16	-0.10	1	-0.03	-0.18	0.34	0.22	0.09	-0.64	0.10	0.16	0.31	-0.03	0.05
ER	0.25	0.12	0.67	-0.03	1	0.65	-0.41	-0.42	-0.65	0.33	-0.78	-0.88	-0.45	-0.76	-0.77
VOL	0.76	0.49	0.62	-0.18	0.65	1	-0.41	-0.39	-0.26	0.19	-0.72	-0.64	0.08	-0.76	-0.57
N. IMP	-0.53	-0.46	-0.61	0.34	-0.41	-0.41	1	0.15	0.35	-0.09	0.57	0.57	0.08	0.55	0.59
GPR C&I	-0.22	-0.36	-0.32	0.22	-0.42	-0.39	0.15	1	0.04	0.01	0.46	0.47	0.28	0.42	0.35
WGI v1	0.03	0.17	-0.44	0.09	-0.65	-0.26	0.35	0.04	1	-0.53	0.43	0.66	0.26	0.40	0.51
WGI v2	-0.06	-0.34	0.08	-0.64	0.33	0.19	-0.09	0.01	-0.53	1	-0.10	-0.30	-0.27	0.07	-0.09
WGI v3	-0.52	-0.65	-0.89	0.10	-0.78	-0.72	0.57	0.46	0.43	-0.10	1	0.88	0.20	0.89	0.77
WGI v4	-0.38	-0.39	-0.79	0.16	-0.88	-0.64	0.57	0.47	0.66	-0.30	0.88	1	0.39	0.85	0.83
WGI v5	0.33	0.11	-0.12	0.31	-0.45	0.08	0.08	0.28	0.26	-0.27	0.20	0.39	1	0.19	0.27
WGI v6	-0.57	-0.62	-0.81	-0.03	-0.76	-0.76	0.55	0.42	0.40	0.07	0.89	0.85	0.19	1	0.72
HER	-0.39	-0.37	-0.76	0.05	-0.77	-0.57	0.59	0.35	0.51	-0.09	0.77	0.83	0.27	0.72	1

Table A.13: South Africa; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intecept)	-0.07*** x10e11 (0.11 x10e10)	-0.06*** x10e11 (0.12 x10e10)	-0.030 x10e11 (0.31 x10e10)	-0.050 x10e11 (0.12 x10e11)	-0.070 x10e11 (0.74 x10e10)	-0.040 x10e11 (0.27 x10e10)	0.80 x10e10 (0.9 x10e10)	-0.02** x10e12 (0.71 x10e10)	-0.08** x10e11 (0.3 x10e10)
GDP PC	0.14** x10e5 (0.55 x10e4)	0.13** x10e5 (0.53 x10e4)	0.870 x10e4 (0.63 x10e4)	0.160 x10e5 (0.11 x10e5)	0.14* x10e5 (0.77 x10e4)	0.2** x10e5 (0.73 x10e4)	0.17*** x10e5 (0.55 x10e4)	0.14** x10e5 (0.54 x10e4)	0.120 x10e5 (0.86 x10e4)
PCOE	0.13*** x10e11 (0.18 x10e10)	0.11*** x10e11 (0.2 x10e10)	0.12*** x10e11 (0.19 x10e10)	0.13*** x10e11 (0.21 x10e10)	0.13*** x10e11 (0.19 x10e10)	0.12*** x10e11 (0.18 x10e10)	0.12*** x10e11 (0.17 x10e10)	0.12*** x10e11 (0.18 x10e10)	0.13*** x10e11 (0.18 x10e10)
CPI	-0.020 x10e9 (0.75 x10e8)	-0.010 x10e9 (0.71 x10e8)	-0.030 x10e9 (0.72 x10e8)	-0.020 x10e9 (0.78 x10e8)	-0.020 x10e9 (0.79 x10e8)	-0.050 x10e9 (0.77 x10e8)	-0.040 x10e9 (0.72 x10e8)	0.150 x10e8 (0.77 x10e8)	-0.020 x10e9 (0.78 x10e8)
ER	0.110 x10e9 (0.77 x10e8)	0.320 x10e8 (0.87 x10e8)	0.310 x10e8 (0.93 x10e8)	0.120 x10e9 (0.92 x10e8)	0.120 x10e9 (0.84 x10e8)	0.18* x10e9 (0.91 x10e8)	0.120 x10e9 (0.73 x10e8)	0.830 x10e8 (0.78 x10e8)	0.880 x10e8 (0.14 x10e9)
VOL	0.05*** x10 (0.01 x10)	0.04*** x10 (0.01 x10)	0.04*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.04** x10 (0.01 x10)	0.06*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)
N. IMP	0.790 x10e7 (0.34 x10e8)	0.230 x10e8 (0.33 x10e8)	0.140 x10e8 (0.33 x10e8)	0.710 x10e7 (0.36 x10e8)	0.830 x10e7 (0.36 x10e8)	0.520 x10e7 (0.34 x10e8)	0.370 x10e8 (0.37 x10e8)	-0.030 x10e9 (0.45 x10e8)	0.90 x10e7 (0.36 x10e8)
GPR C&I		0.640 x10e10 (0.37 x10e10)							
WGI v 1			-0.030 x10e9 (0.21 x10e8)						
WGI v 2				-0.020 x10e9 (0.13 x10e9)					
WGI v 3					-0.060 x10e8 (0.79 x10e8)				
WGI v 4						-0.040 x10e9 (0.32 x10e8)			
WGI v 5							-0.020 x10e10 (0.9 x10e8)		
WGI v 6								0.10 x10e9 (0.77 x10e8)	
HER									0.140 x10e8 (0.6 x10e8)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	2825.03	2667.95	2722.45	2914.47	2917.15	2777.57	2672.61	2752.14	2912.55
R2	0.924	0.936	0.934	0.924	0.924	0.931	0.936	0.932	0.924
adj R2	0.895	0.906	0.903	0.888	0.888	0.899	0.906	0.900	0.889

Table A.14: Norway; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.62	0.04	0.38	0.04	0.67	0.68	0.35	-0.62	0.54	0.49	0.48	0.08	0.57	0.63
GDP PC	0.62	1	-0.16	0.04	-0.50	0.51	0.53	-0.23	-0.29	0.86	0.76	0.60	0.43	0.32	0.36
PCOE	0.04	-0.16	1	0.32	-0.08	-0.67	-0.63	0.35	-0.16	-0.46	-0.41	-0.60	-0.33	-0.37	-0.29
CPI	0.38	0.04	0.32	1	0.46	0.04	0.13	0.44	-0.54	-0.01	-0.04	-0.02	-0.10	0.13	0.50
ER	0.04	-0.50	-0.08	0.46	1	0.09	0.14	0.57	-0.42	-0.22	-0.19	0.09	-0.13	0.27	0.56
VOL	0.67	0.51	-0.67	0.04	0.09	1	0.96	-0.02	-0.27	0.66	0.59	0.77	0.29	0.63	0.63
N. IMP	0.68	0.53	-0.63	0.13	0.14	0.96	1	-0.03	-0.32	0.67	0.63	0.76	0.41	0.75	0.67
GPR C&I	0.35	-0.23	0.35	0.44	0.57	-0.02	-0.03	1	-0.51	-0.21	-0.27	-0.08	-0.45	0.22	0.35
WGI v1	-0.62	-0.29	-0.16	-0.54	-0.42	-0.27	-0.32	-0.51	1	-0.42	-0.44	-0.39	-0.08	-0.30	-0.69
WGI v2	0.54	0.86	-0.46	-0.01	-0.22	0.66	0.67	-0.21	-0.42	1	0.92	0.76	0.52	0.39	0.50
WGI v3	0.49	0.76	-0.41	-0.04	-0.19	0.59	0.63	-0.27	-0.44	0.92	1	0.74	0.60	0.38	0.45
WGI v4	0.48	0.60	-0.60	-0.02	0.09	0.77	0.76	-0.08	-0.39	0.76	0.74	1	0.42	0.54	0.65
WGI v5	0.08	0.43	-0.33	-0.10	-0.13	0.29	0.41	-0.45	-0.08	0.52	0.60	0.42	1	0.15	0.19
WGI v6	0.57	0.32	-0.37	0.13	0.27	0.63	0.75	0.22	-0.30	0.39	0.38	0.54	0.15	1	0.55
HER	0.63	0.36	-0.29	0.50	0.56	0.63	0.67	0.35	-0.69	0.50	0.45	0.65	0.19	0.55	1

Table A.15: Norway; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	-0.030 x10e11 (0.18 x10e10)	-0.020 x10e11 (0.18 x10e10)	-0.05*** x10e11 (0.13 x10e10)	-0.010 x10e11 (0.26 x10e10)	-0.030 x10e11 (0.24 x10e10)	0.350 x10e10 (0.24 x10e10)	-0.030 x10e11 (0.25 x10e10)	-0.030 x10e11 (0.33 x10e10)	-0.040 x10e11 (0.46 x10e10)
GDP PC	0.240 x10e6 (0.19 x10e6)	0.230 x10e6 (0.18 x10e6)	0.4*** x10e6 (0.12 x10e6)	0.320 x10e6 (0.22 x10e6)	0.260 x10e6 (0.21 x10e6)	0.920 x10e5 (0.16 x10e6)	0.250 x10e6 (0.2 x10e6)	0.270 x10e6 (0.25 x10e6)	0.270 x10e6 (0.21 x10e6)
PCOE	-0.020 x10e11 (0.79 x10e10)	0.130 x10e10 (0.79 x10e10)	-0.010 x10e11 (0.51 x10e10)	-0.020 x10e11 (0.81 x10e10)	-0.020 x10e11 (0.82 x10e10)	0.180 x10e10 (0.64 x10e10)	-0.010 x10e11 (0.85 x10e10)	-0.020 x10e11 (0.89 x10e10)	-0.010 x10e11 (0.82 x10e10)
CPI	0.16* x10e9 (0.79 x10e8)	0.110 x10e9 (0.83 x10e8)	0.390 x10e8 (0.56 x10e8)	0.130 x10e9 (0.96 x10e8)	0.16* x10e9 (0.83 x10e8)	0.2*** x10e9 (0.64 x10e8)	0.16* x10e9 (0.83 x10e8)	0.16* x10e9 (0.82 x10e8)	0.16* x10e9 (0.83 x10e8)
ER	0.560 x10e9 (0.35 x10e9)	0.20 x10e9 (0.41 x10e9)	0.17*** x10e10 (0.32 x10e9)	0.560 x10e9 (0.35 x10e9)	0.60 x10e9 (0.39 x10e9)	0.110 x10e9 (0.31 x10e9)	0.540 x10e9 (0.37 x10e9)	0.650 x10e9 (0.65 x10e9)	0.560 x10e9 (0.36 x10e9)
VOL	0.010 x10 (0.02 x10)	0.010 x10 (0.02 x10)	0.02* x10 (0.01 x10)	0.010 x10 (0.02 x10)	0.010 x10 (0.02 x10)	0.030 x10 (0.02 x10)	0.010 x10 (0.02 x10)	0.010 x10 (0.02 x10)	00 x10 (0.02 x10)
N. IMP	-0.020 x10e9 (0.76 x10e8)	-0.030 x10e9 (0.73 x10e8)	0.170 x10e7 (0.48 x10e8)	-0.020 x10e9 (0.77 x10e8)	-0.030 x10e9 (0.8 x10e8)	0.140 x10e8 (0.61 x10e8)	-0.020 x10e9 (0.78 x10e8)	-0.020 x10e9 (0.81 x10e8)	-0.030 x10e9 (0.82 x10e8)
GPR C&I		0.110 x10e11 (0.71 x10e10)							
WGI v 1			-0.09*** x10e9 (0.18 x10e8)						
WGI v 2				-0.020 x10e9 (0.38 x10e8)					
WGI v 3					0.60 x10e7 (0.21 x10e8)				
WGI v 4						-0.09*** x10e9 (0.27 x10e8)			
WGI v 5							0.40 x10e7 (0.42 x10e8)		
WGI v 6								0.50 x10e7 (0.29 x10e8)	
HER									0.240 x10e8 (0.6 x10e8)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	4689.76	4513.26	2991.92	4775.62	4830.29	3726.77	4842.06	4838.92	4818.29
R2	0.729	0.765	0.897	0.737	0.731	0.840	0.729	0.730	0.732
adj R2	0.628	0.655	0.848	0.614	0.605	0.765	0.603	0.604	0.607

Table A.16: Perù; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.74	0.49	0.59	0.12	0.66	0.57	0.50	0.38	0.25	0.20	0.18	0.16	-0.65	0.42
GDP PC	0.74	1	0.67	0.33	-0.20	0.92	0.85	0.11	0.69	0.63	0.34	0.63	0.22	-0.64	0.52
PCOE	0.49	0.67	1	0.18	0.12	0.52	0.72	0.06	0.59	0.40	0.11	0.38	-0.04	-0.39	0.28
CPI	0.59	0.33	0.18	1	0.12	0.19	0.07	0.45	0.02	-0.18	0.01	0.10	-0.17	-0.35	0.11
ER	0.12	-0.20	0.12	0.12	1	-0.21	-0.04	0.55	0.32	-0.26	-0.35	-0.38	0.09	-0.43	-0.07
VOL	0.66	0.92	0.52	0.19	-0.21	1	0.87	0.10	0.73	0.59	0.48	0.72	0.41	-0.60	0.66
N. IMP	0.57	0.85	0.72	0.07	-0.04	0.87	1	0.11	0.78	0.56	0.42	0.64	0.34	-0.53	0.63
GPR C&I	0.50	0.11	0.06	0.45	0.55	0.10	0.11	1	0.20	-0.31	-0.03	0.02	0.07	-0.55	0.17
WGI v1	0.38	0.69	0.59	0.02	0.32	0.73	0.78	0.20	1	0.51	0.15	0.51	0.23	-0.70	0.42
WGI v2	0.25	0.63	0.40	-0.18	-0.26	0.59	0.56	-0.31	0.51	1	0.04	0.25	0.27	-0.18	0.07
WGI v3	0.20	0.34	0.11	0.01	-0.35	0.48	0.42	-0.03	0.15	0.04	1	0.60	0.30	-0.05	0.83
WGI v4	0.18	0.63	0.38	0.10	-0.38	0.72	0.64	0.02	0.51	0.25	0.60	1	0.31	-0.33	0.68
WGI v5	0.16	0.22	-0.04	-0.17	0.09	0.41	0.34	0.07	0.23	0.27	0.30	0.31	1	-0.37	0.48
WGI v6	-0.65	-0.64	-0.39	-0.35	-0.43	-0.60	-0.53	-0.55	-0.70	-0.18	-0.05	-0.33	-0.37	1	-0.42
HER	0.42	0.52	0.28	0.11	-0.07	0.66	0.63	0.17	0.42	0.07	0.83	0.68	0.48	-0.42	1

Table A.17: Perù; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intecept)	-0.03** x10e11 (0.12 x10e10)	-0.03** x10e11 (0.11 x10e10)	-0.03** x10e11 (0.12 x10e10)	-0.020 x10e11 (0.18 x10e10)	-0.020 x10e11 (0.16 x10e10)	-0.010 x10e11 (0.14 x10e10)	0.50 x10e8 (0.23 x10e10)	-0.030 x10e11 (0.22 x10e10)	-0.05** x10e11 (0.17 x10e10)
GDP PC	0.43** x10e5 (0.17 x10e5)	0.49** x10e5 (0.17 x10e5)	0.42** x10e5 (0.17 x10e5)	0.39** x10e5 (0.17 x10e5)	0.310 x10e5 (0.2 x10e5)	0.45** x10e5 (0.15 x10e5)	0.33* x10e5 (0.17 x10e5)	0.390 x10e5 (0.24 x10e5)	0.44** x10e5 (0.16 x10e5)
PCOE	0.170 x10e10 (0.29 x10e10)	0.140 x10e9 (0.3 x10e10)	0.120 x10e10 (0.3 x10e10)	0.320 x10e10 (0.32 x10e10)	0.330 x10e10 (0.32 x10e10)	0.420 x10e10 (0.3 x10e10)	0.140 x10e10 (0.28 x10e10)	0.210 x10e10 (0.32 x10e10)	0.520 x10e9 (0.31 x10e10)
CPI	0.62*** x10e8 (0.13 x10e8)	0.55*** x10e8 (0.13 x10e8)	0.59*** x10e8 (0.13 x10e8)	0.65*** x10e8 (0.13 x10e8)	0.64*** x10e8 (0.13 x10e8)	0.68*** x10e8 (0.12 x10e8)	0.69*** x10e8 (0.13 x10e8)	0.67*** x10e8 (0.21 x10e8)	0.58*** x10e8 (0.13 x10e8)
ER	0.19** x10e10 (0.71 x10e9)	0.21** x10e10 (0.7 x10e9)	0.22** x10e10 (0.81 x10e9)	0.18** x10e10 (0.72 x10e9)	0.19** x10e10 (0.71 x10e9)	0.2*** x10e10 (0.66 x10e9)	0.14* x10e10 (0.75 x10e9)	0.170 x10e10 #REF!	0.22** x10e10 (0.74 x10e9)
VOL	-0.010 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.13 x10e8)	-0.010 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.15 x10e8)	-0.020 x10e9 (0.14 x10e8)	-0.04* x10e9 (0.19 x10e8)	-0.03* x10e9 (0.18 x10e8)	-0.010 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.14 x10e8)
N. IMP	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)	0.08*** x10 (0.01 x10)
GPR C&I		0.850 x10e9 (0.61 x10e9)							
WGI v 1			-0.030 x10e8 (0.46 x10e7)						
WGI v 2				-0.020 x10e9 (0.15 x10e8)					
WGI v 3					-0.010 x10e9 (0.11 x10e8)				
WGI v 4						-0.02* x10e9 (0.13 x10e8)			
WGI v 5							-0.030 x10e9 (0.18 x10e8)		
WGI v 6								-0.030 x10e8 (0.1 x10e8)	
HER									0.20 x10e8 (0.18 x10e8)
N	21	21	21	21	21	21	21	21	21
df	14	13	13	13	13	13	13	13	13
RMSE	1073.21	1038.51	1090.93	1063.65	1067.21	990.96	1018.76	1110.60	1063.51
R2	0.983	0.985	0.984	0.984	0.984	0.986	0.986	0.983	0.984
adj R2	0.976	0.977	0.975	0.976	0.976	0.979	0.978	0.974	0.976

Table A.18: Spain; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.13	-0.39	0.00	-0.12	0.79	0.96	-0.23	0.19	-0.68	-0.01	-0.60	-0.42	-0.27	-0.02
GDP PC	0.13	1	-0.57	0.00	-0.76	0.11	0.10	-0.54	-0.45	-0.31	-0.81	-0.22	-0.08	-0.25	0.09
PCOE	-0.39	-0.57	1	0.05	0.18	-0.53	-0.35	0.63	-0.20	0.72	0.70	0.67	0.50	0.65	0.36
CPI	0.00	0.00	0.05	1	0.12	-0.20	-0.22	0.31	-0.15	0.20	0.01	0.25	0.20	0.40	0.20
ER	-0.12	-0.76	0.18	0.12	1	0.13	-0.19	0.33	0.73	-0.01	0.39	-0.11	-0.37	-0.24	-0.35
VOL	0.79	0.11	-0.53	-0.20	0.13	1	0.78	-0.32	0.51	-0.86	-0.18	-0.89	-0.81	-0.63	-0.24
N. IMP	0.96	0.10	-0.35	-0.22	-0.19	0.78	1	-0.29	0.18	-0.65	0.06	-0.58	-0.37	-0.27	-0.05
GPR C&I	-0.23	-0.54	0.63	0.31	0.33	-0.32	-0.29	1	-0.08	0.47	0.57	0.35	0.17	0.38	0.04
WGI v1	0.19	-0.45	-0.20	-0.15	0.73	0.51	0.18	-0.08	1	-0.54	0.17	-0.50	-0.67	-0.54	-0.51
WGI v2	-0.68	-0.31	0.72	0.20	-0.01	-0.86	-0.65	0.47	-0.54	1	0.41	0.87	0.79	0.70	0.39
WGI v3	-0.01	-0.81	0.70	0.01	0.39	-0.18	0.06	0.57	0.17	0.41	1	0.44	0.31	0.42	0.01
WGI v4	-0.60	-0.22	0.67	0.25	-0.11	-0.89	-0.58	0.35	-0.50	0.87	0.44	1	0.89	0.72	0.23
WGI v5	-0.42	-0.08	0.50	0.20	-0.37	-0.81	-0.37	0.17	-0.67	0.79	0.31	0.89	1	0.78	0.38
WGI v6	-0.27	-0.25	0.65	0.40	-0.24	-0.63	-0.27	0.38	-0.54	0.70	0.42	0.72	0.78	1	0.57
HER	-0.02	0.09	0.36	0.20	-0.35	-0.24	-0.05	0.04	-0.51	0.39	0.01	0.23	0.38	0.57	1

Table A.19: Spain; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	0.160 x10e9 (0.14 x10e9)	0.170 x10e9 (0.15 x10e9)	0.180 x10e9 (0.15 x10e9)	0.190 x10e9 (0.13 x10e9)	0.210 x10e9 (0.15 x10e9)	0.160 x10e9 (0.14 x10e9)	0.140 x10e9 (0.16 x10e9)	0.930 x10e8 (0.17 x10e9)	0.320 x10e9 (0.2 x10e9)
GDP PC	-0.08** x10e5 (0.29 x10e4)	-0.09** x10e5 (0.39 x10e4)	-0.08** x10e5 (0.32 x10e4)	-0.01*** x10e6 (0.29 x10e4)	-0.030 x10e5 (0.61 x10e4)	-0.09** x10e5 (0.3 x10e4)	-0.09* x10e5 (0.44 x10e4)	-0.1** x10e5 (0.36 x10e4)	-0.040 x10e5 (0.5 x10e4)
PCOE	0.640 x10e9 (0.66 x10e9)	0.60 x10e9 (0.71 x10e9)	0.50 x10e9 (0.79 x10e9)	0.10 x10e10 (0.63 x10e9)	0.720 x10e9 (0.67 x10e9)	0.230 x10e9 (0.85 x10e9)	0.730 x10e9 (0.74 x10e9)	0.970 x10e9 (0.79 x10e9)	0.260 x10e9 (0.74 x10e9)
CPI	-0.030 x10e8 (0.32 x10e7)	-0.030 x10e8 (0.33 x10e7)	-0.030 x10e8 (0.33 x10e7)	-0.030 x10e8 (0.29 x10e7)	-0.020 x10e8 (0.33 x10e7)	-0.050 x10e8 (0.39 x10e7)	-0.030 x10e8 (0.33 x10e7)	-0.020 x10e8 (0.36 x10e7)	-0.030 x10e8 (0.32 x10e7)
ER	-0.020 x10e9 (0.13 x10e8)	-0.020 x10e9 (0.15 x10e8)	-0.020 x10e9 (0.15 x10e8)	-0.04** x10e9 (0.14 x10e8)	-0.020 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.14 x10e8)	-0.020 x10e9 (0.13 x10e8)	-0.070 x10e8 (0.18 x10e8)
VOL	0.23*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.24*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.23*** x10 (0.01 x10)	0.22*** x10 (0.02 x10)
N. IMP	-0.03** x10e9 (0.15 x10e8)	-0.03** x10e9 (0.15 x10e8)	-0.04** x10e9 (0.16 x10e8)	-0.03* x10e9 (0.14 x10e8)	-0.03** x10e9 (0.15 x10e8)	-0.04** x10e9 (0.16 x10e8)	-0.04** x10e9 (0.16 x10e8)	-0.04** x10e9 (0.15 x10e8)	-0.030 x10e9 (0.17 x10e8)
GPR C&I		0.140 x10e8 (0.59 x10e8)							
WGI v 1			-0.060 x10e7 (0.17 x10e7)						
WGI v 2				0.840 x10e7 (0.41 x10e7)					
WGI v 3					-0.020 x10e8 (0.21 x10e7)				
WGI v 4						0.150 x10e7 (0.2 x10e7)			
WGI v 5							0.630 x10e6 (0.2 x10e7)		
WGI v 6								0.120 x10e7 (0.15 x10e7)	
HER									-0.050 x10e8 (0.42 x10e7)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	233.58	240.81	240.26	213.57	235.10	236.51	240.46	236.36	231.86
R2	0.993	0.993	0.993	0.994	0.993	0.993	0.993	0.993	0.993
adj R2	0.990	0.989	0.989	0.992	0.990	0.990	0.989	0.990	0.990

Table A.20: China; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.41	0.04	-0.03	-0.11	0.99	0.91	0.69	-0.11	-0.02	0.23	-0.27	0.44	0.40	-0.42
GDP PC	0.41	1	0.06	0.10	-0.77	0.47	0.47	0.76	-0.07	-0.25	0.93	-0.01	0.88	0.73	0.30
PCOE	0.04	0.06	1	0.25	-0.24	0.02	0.07	0.12	-0.62	-0.46	0.06	0.62	-0.16	-0.37	-0.34
CPI	-0.03	0.10	0.25	1	-0.33	-0.02	0.00	0.01	-0.31	-0.31	0.11	0.55	-0.05	-0.29	-0.16
ER	-0.11	-0.77	-0.24	-0.33	1	-0.13	-0.08	-0.38	0.33	0.55	-0.69	-0.13	-0.55	-0.40	-0.01
VOL	0.99	0.47	0.02	-0.02	-0.13	1	0.94	0.73	-0.08	-0.04	0.30	-0.26	0.50	0.44	-0.33
N. IMP	0.91	0.47	0.07	0.00	-0.08	0.94	1	0.74	-0.08	-0.06	0.33	-0.14	0.51	0.43	-0.17
GPR C&I	0.69	0.76	0.12	0.01	-0.38	0.73	0.74	1	0.08	-0.05	0.65	0.02	0.69	0.58	0.14
WGI v1	-0.11	-0.07	-0.62	-0.31	0.33	-0.08	-0.08	0.08	1	0.73	-0.03	-0.18	0.10	0.09	0.54
WGI v2	-0.02	-0.25	-0.46	-0.31	0.55	-0.04	-0.06	-0.05	0.73	1	-0.25	-0.21	-0.08	0.07	0.27
WGI v3	0.23	0.93	0.06	0.11	-0.69	0.30	0.33	0.65	-0.03	-0.25	1	0.10	0.85	0.66	0.46
WGI v4	-0.27	-0.01	0.62	0.55	-0.13	-0.26	-0.14	0.02	-0.18	-0.21	0.10	1	-0.20	-0.37	0.17
WGI v5	0.44	0.88	-0.16	-0.05	-0.55	0.50	0.51	0.69	0.10	-0.08	0.85	-0.20	1	0.73	0.39
WGI v6	0.40	0.73	-0.37	-0.29	-0.40	0.44	0.43	0.58	0.09	0.07	0.66	-0.37	0.73	1	0.34
HER	-0.42	0.30	-0.34	-0.16	-0.01	-0.33	-0.17	0.14	0.54	0.27	0.46	0.17	0.39	0.34	1

Table A.21: China; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intecept)	-0.01* x10e11 (0.83 x10e9)	-0.02* x10e11 (0.87 x10e9)	-0.02** x10e11 (0.94 x10e9)	-0.020 x10e11 (1 x10e9)	-0.020 x10e11 (0.16 x10e10)	-0.020 x10e11 (0.18 x10e10)	-0.05** x10e11 (0.2 x10e10)	-0.070 x10e10 (0.13 x10e10)	-0.080 x10e10 (0.13 x10e10)
GDP PC	0.190 x10e5 (0.15 x10e5)	0.190 x10e5 (0.15 x10e5)	0.190 x10e5 (0.14 x10e5)	0.180 x10e5 (0.15 x10e5)	0.230 x10e5 (0.2 x10e5)	0.220 x10e5 (0.17 x10e5)	0.47** x10e5 (0.21 x10e5)	0.150 x10e5 (0.15 x10e5)	0.20 x10e5 (0.15 x10e5)
PCOE	0.430 x10e10 (0.99 x10e10)	0.650 x10e10 (0.12 x10e11)	0.120 x10e11 (0.11 x10e11)	0.420 x10e10 (0.1 x10e11)	0.410 x10e10 (0.1 x10e11)	0.670 x10e10 (0.11 x10e11)	0.110 x10e11 (0.99 x10e10)	0.20 x10e10 (0.1 x10e11)	0.530 x10e10 (0.1 x10e11)
CPI	0.42* x10e8 (0.24 x10e8)	0.410 x10e8 (0.25 x10e8)	0.250 x10e8 (0.26 x10e8)	0.44* x10e8 (0.25 x10e8)	0.420 x10e8 (0.25 x10e8)	0.370 x10e8 (0.27 x10e8)	0.180 x10e8 (0.26 x10e8)	0.52* x10e8 (0.27 x10e8)	0.40 x10e8 (0.25 x10e8)
ER	0.620 x10e9 (0.68 x10e9)	0.610 x10e9 (0.7 x10e9)	0.350 x10e9 (0.68 x10e9)	0.570 x10e9 (0.71 x10e9)	0.710 x10e9 (0.76 x10e9)	0.770 x10e9 (0.77 x10e9)	0.15* x10e10 (0.79 x10e9)	0.670 x10e9 (0.69 x10e9)	0.750 x10e9 (0.73 x10e9)
VOL	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.06*** x10 (0.01 x10)	0.05*** x10 (0.01 x10)	0.06*** x10 (0.01 x10)
N. IMP	0.190 x10e8 (0.24 x10e8)	0.170 x10e8 (0.25 x10e8)	0.320 x10e8 (0.25 x10e8)	0.230 x10e8 (0.26 x10e8)	0.150 x10e8 (0.27 x10e8)	0.170 x10e8 (0.25 x10e8)	0.190 x10e8 (0.23 x10e8)	0.250 x10e7 (0.32 x10e8)	0.140 x10e8 (0.26 x10e8)
GPR C&I		-0.020 x10e10 (0.59 x10e9)							
WGI v 1			0.880 x10e7 (0.59 x10e7)						
WGI v 2				0.390 x10e7 (0.84 x10e7)					
WGI v 3					0.370 x10e7 (0.11 x10e8)				
WGI v 4						0.480 x10e7 (0.1 x10e8)			
WGI v 5							0.22* x10e8 (0.12 x10e8)		
WGI v 6								-0.090 x10e8 (0.11 x10e8)	
HER									-0.010 x10e9 (0.22 x10e8)
N	23	23	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15	15
RMSE	1107.60	1138.54	1067.12	1135.93	1139.89	1135.76	1034.87	1118.86	1129.45
R2	0.822	0.824	0.845	0.824	0.823	0.825	0.854	0.830	0.826
adj R2	0.755	0.741	0.773	0.743	0.741	0.743	0.786	0.750	0.746

Table A.22: Italy; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.42	0.53	0.62	-0.27	0.77	-0.13	0.28	-0.18	0.28	-0.40	-0.02	-0.34	0.08	0.33
GDP PC	0.42	1	-0.02	-0.01	-0.91	0.41	0.16	-0.10	-0.67	0.05	-0.84	-0.08	-0.70	-0.58	-0.22
PCOE	0.53	-0.02	1	0.78	0.26	0.18	-0.13	0.70	-0.04	0.08	-0.08	-0.46	-0.27	0.21	0.38
CPI	0.62	-0.01	0.78	1	0.14	0.33	-0.35	0.54	0.18	0.09	-0.07	-0.06	0.00	0.46	0.35
ER	-0.27	-0.91	0.26	0.14	1	-0.41	-0.06	0.25	0.60	-0.03	0.70	-0.19	0.44	0.50	0.30
VOL	0.77	0.41	0.18	0.33	-0.41	1	-0.25	0.08	-0.30	0.35	-0.40	0.20	-0.32	0.17	0.43
N. IMP	-0.13	0.16	-0.13	-0.35	-0.06	-0.25	1	-0.23	-0.37	-0.33	0.03	-0.16	-0.27	-0.68	-0.39
GPR C&I	0.28	-0.10	0.70	0.54	0.25	0.08	-0.23	1	-0.21	0.26	0.11	-0.38	-0.15	0.17	0.45
WGI v1	-0.18	-0.67	-0.04	0.18	0.60	-0.30	-0.37	-0.21	1	-0.24	0.43	0.06	0.65	0.62	-0.01
WGI v2	0.28	0.05	0.08	0.09	-0.03	0.35	-0.33	0.26	-0.24	1	-0.24	0.07	-0.19	0.22	0.54
WGI v3	-0.40	-0.84	-0.08	-0.07	0.70	-0.40	0.03	0.11	0.43	-0.24	1	0.17	0.75	0.26	0.08
WGI v4	-0.02	-0.08	-0.46	-0.06	-0.19	0.20	-0.16	-0.38	0.06	0.07	0.17	1	0.46	0.21	-0.06
WGI v5	-0.34	-0.70	-0.27	0.00	0.44	-0.32	-0.27	-0.15	0.65	-0.19	0.75	0.46	1	0.42	-0.10
WGI v6	0.08	-0.58	0.21	0.46	0.50	0.17	-0.68	0.17	0.62	0.22	0.26	0.21	0.42	1	0.49
HER	0.33	-0.22	0.38	0.35	0.30	0.43	-0.39	0.45	-0.01	0.54	0.08	-0.06	-0.10	0.49	1

Table A.23: Italy; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9
(Intercept)	-0.070 x10e10 (0.57 x10e9)	-0.10 x10e10 (0.6 x10e9)	-0.01** x10e11 (0.55 x10e9)	0.190 x10e9 (0.19 x10e10)	-0.04** x10e11 (0.12 x10e10)	-0.040 x10e10 (0.15 x10e10)	-0.01*** x10e12 (0.3 x10e10)	-0.040 x10e11 (0.3 x10e10)	0.420 x10e7 (0.19 x10e10)
GDP PC	0.680 x10e4 (0.67 x10e4)	0.850 x10e4 (0.69 x10e4)	0.90 x10e4 (0.6 x10e4)	0.640 x10e4 (0.7 x10e4)	0.18** x10e5 (0.73 x10e4)	0.660 x10e4 (0.7 x10e4)	0.12** x10e5 (0.56 x10e4)	0.670 x10e4 (0.68 x10e4)	0.740 x10e4 (0.71 x10e4)
PCOE	0.63** x10e10 (0.23 x10e10)	0.62** x10e10 (0.23 x10e10)	0.46* x10e10 (0.21 x10e10)	0.58** x10e10 (0.26 x10e10)	0.58** x10e10 (0.2 x10e10)	0.62** x10e10 (0.24 x10e10)	0.67*** x10e10 (0.18 x10e10)	0.63** x10e10 (0.23 x10e10)	0.66** x10e10 (0.24 x10e10)
CPI	-0.010 x10e9 (0.12 x10e8)	-0.040 x10e8 (0.14 x10e8)	-0.010 x10e9 (0.11 x10e8)	-0.010 x10e9 (0.13 x10e8)	-0.020 x10e9 (0.11 x10e8)	-0.010 x10e9 (0.13 x10e8)	-0.03** x10e9 (0.11 x10e8)	-0.010 x10e9 (0.12 x10e8)	-0.010 x10e9 (0.13 x10e8)
ER	-0.020 x10e10 (0.46 x10e9)	0.260 x10e8 (0.5 x10e9)	-0.020 x10e10 (0.4 x10e9)	-0.020 x10e10 (0.47 x10e9)	0.280 x10e9 (0.43 x10e9)	-0.020 x10e10 (0.49 x10e9)	0.310 x10e9 (0.39 x10e9)	-0.010 x10e10 (0.46 x10e9)	-0.030 x10e10 (0.53 x10e9)
VOL	0.07*** x10 (0.01 x10)	0.07*** x10 (0.01 x10)	0.06*** x10 (0.01 x10)	0.07*** x10 (0.01 x10)	0.06*** x10 (0.01 x10)	0.07*** x10 (0.01 x10)	0.06*** x10 (0.01 x10)	0.07*** x10 (0.01 x10)	0.07*** x10 (0.01 x10)
N. IMP	-0.020 x10e9 (0.16 x10e8)	-0.020 x10e9 (0.16 x10e8)	-0.010 x10e8 (0.16 x10e8)	-0.020 x10e9 (0.16 x10e8)	-0.080 x10e8 (0.14 x10e8)	-0.020 x10e9 (0.17 x10e8)	-0.090 x10e8 (0.13 x10e8)	-0.020 x10e9 (0.16 x10e8)	-0.020 x10e9 (0.17 x10e8)
GPR C&I		-0.040 x10e10 (0.39 x10e9)							
WGI v 1			0.85** x10e7 (0.37 x10e7)						
WGI v 2				-0.10 x10e8 (0.19 x10e8)					
WGI v 3					0.22** x10e8 (0.87 x10e7)				
WGI v 4						-0.030 x10e8 (0.14 x10e8)			
WGI v 5							0.97*** x10e8 (0.31 x10e8)		
WGI v 6								0.310 x10e8 (0.32 x10e8)	
HER									-0.010 x10e9 (0.24 x10e8)
N	21	21	21	21	21	21	21	21	21
df	14	13	13	13	13	13	13	13	13
RMSE	887.84	885.27	774.36	912.41	750.80	919.40	693.74	889.95	915.29
R2	0.885	0.894	0.919	0.887	0.924	0.886	0.935	0.893	0.887
adj R2	0.836	0.837	0.875	0.827	0.883	0.824	0.900	0.835	0.826

Table A.24: Belgium; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	GPR C&I	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.31	-0.19	-0.13	-0.32	0.88	0.24	0.01	0.13	0.23	0.28	-0.26	0.50	0.62	-0.05
GDP PC	0.31	1	0.06	0.29	-0.46	0.20	0.54	0.30	-0.53	-0.16	-0.60	0.06	-0.12	0.17	0.30
PCOE	-0.19	0.06	1	0.60	0.40	-0.42	0.18	0.41	0.04	-0.44	-0.32	-0.14	-0.31	-0.34	0.01
CPI	-0.13	0.29	0.60	1	0.13	-0.22	0.23	0.57	-0.12	-0.17	-0.27	0.02	0.01	-0.24	0.10
ER	-0.32	-0.46	0.40	0.13	1	-0.20	0.31	0.45	-0.05	0.07	-0.22	-0.27	-0.51	-0.31	-0.70
VOL	0.88	0.20	-0.42	-0.22	-0.20	1	0.34	0.10	-0.06	0.45	0.22	-0.26	0.36	0.60	-0.23
N. IMP	0.24	0.54	0.18	0.23	0.31	0.34	1	0.64	-0.67	0.09	-0.66	-0.17	-0.45	0.10	-0.44
GPR C&I	0.01	0.30	0.41	0.57	0.45	0.10	0.64	1	-0.54	0.23	-0.47	-0.15	-0.40	0.09	-0.25
WGI v1	0.13	-0.53	0.04	-0.12	-0.05	-0.06	-0.67	-0.54	1	0.00	0.79	-0.20	0.69	0.07	0.21
WGI v2	0.23	-0.16	-0.44	-0.17	0.07	0.45	0.09	0.23	0.00	1	0.29	-0.06	0.24	0.31	-0.07
WGI v3	0.28	-0.60	-0.32	-0.27	-0.22	0.22	-0.66	-0.47	0.79	0.29	1	-0.12	0.78	0.27	0.17
WGI v4	-0.26	0.06	-0.14	0.02	-0.27	-0.26	-0.17	-0.15	-0.20	-0.06	-0.12	1	-0.03	0.05	0.44
WGI v5	0.50	-0.12	-0.31	0.01	-0.51	0.36	-0.45	-0.40	0.69	0.24	0.78	-0.03	1	0.40	0.34
WGI v6	0.62	0.17	-0.34	-0.24	-0.31	0.60	0.10	0.09	0.07	0.31	0.27	0.05	0.40	1	0.11
HER	-0.05	0.30	0.01	0.10	-0.70	-0.23	-0.44	-0.25	0.21	-0.07	0.17	0.44	0.34	0.11	1

Table A.25: Belgium; Correlation variable-by-variable

A.2 African Countries

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	-0.01*** x10e12 (0.45 x10e10)	-0.01** x10e12 (0.53 x10e10)	-0.01** x10e12 (0.48 x10e10)	-0.01*** x10e12 (0.47 x10e10)	-0.01** x10e12 (0.53 x10e10)	-0.01*** x10e12 (0.45 x10e10)	-0.02*** x10e12 (0.46 x10e10)	-0.02*** x10e12 (0.71 x10e10)
GDP PC	0.18*** x10e7 (0.37 x10e6)	0.18*** x10e7 (0.39 x10e6)	0.18*** x10e7 (0.39 x10e6)	0.19*** x10e7 (0.4 x10e6)	0.19*** x10e7 (0.46 x10e6)	0.18*** x10e7 (0.37 x10e6)	0.2*** x10e7 (0.41 x10e6)	0.2*** x10e7 (0.37 x10e6)
PCOE	0.960 x10e10 (0.64 x10e10)	0.720 x10e10 (0.8 x10e10)	0.10 x10e11 (0.72 x10e10)	0.110 x10e11 (0.75 x10e10)	0.720 x10e10 (0.1 x10e11)	0.120 x10e11 (0.67 x10e10)	0.13* x10e11 (0.75 x10e10)	0.930 x10e10 (0.62 x10e10)
CPI	0.150 x10e9 (0.11 x10e9)	0.170 x10e9 (0.12 x10e9)	0.140 x10e9 (0.12 x10e9)	0.130 x10e9 (0.12 x10e9)	0.150 x10e9 (0.12 x10e9)	0.140 x10e9 (0.11 x10e9)	0.120 x10e9 (0.12 x10e9)	0.110 x10e9 (0.11 x10e9)
ER	-0.090 x10e8 (0.19 x10e8)	-0.010 x10e9 (0.22 x10e8)	-0.090 x10e8 (0.2 x10e8)	-0.080 x10e8 (0.2 x10e8)	-0.070 x10e8 (0.2 x10e8)	-0.080 x10e8 (0.19 x10e8)	-0.050 x10e8 (0.19 x10e8)	0.450 x10e7 (0.21 x10e8)
VOL	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)	0.04** x10 (0.02 x10)
N. IMP	0.540 x10e8 (0.12 x10e9)	0.490 x10e8 (0.13 x10e9)	0.540 x10e8 (0.13 x10e9)	0.390 x10e8 (0.13 x10e9)	0.420 x10e8 (0.13 x10e9)	0.440 x10e8 (0.12 x10e9)	0.350 x10e8 (0.13 x10e9)	0.950 x10e8 (0.12 x10e9)
WGI v 1		0.350 x10e8 (0.68 x10e8)						
WGI v 2			-0.020 x10e9 (0.76 x10e8)					
WGI v 3				-0.010 x10e9 (0.45 x10e8)				
WGI v 4					0.150 x10e8 (0.5 x10e8)			
WGI v 5						-0.030 x10e9 (0.34 x10e8)		
WGI v 6							-0.050 x10e9 (0.5 x10e8)	
HER								0.130 x10e9 (0.95 x10e8)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	7439.53	7616.07	7667.08	7656.33	7660.30	7433.33	7468.24	7220.62
R2	0.884	0.886	0.884	0.885	0.885	0.891	0.890	0.898
adj R2	0.840	0.833	0.831	0.831	0.831	0.841	0.839	0.850

Table A.26: Algeria; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.63	0.62	0.23	-0.50	-0.10	-0.20	0.07	0.25	0.57	0.10	0.17	0.63	0.19
GDP PC	0.63	1	-0.01	0.43	0.07	-0.79	0.32	0.24	0.51	0.68	-0.61	-0.12	0.67	-0.51
PCOE	0.62	-0.01	1	-0.03	-0.65	0.47	-0.43	0.05	0.10	0.30	0.73	0.49	0.42	0.56
CPI	0.23	0.43	-0.03	1	0.38	-0.52	0.17	0.12	0.21	0.16	-0.39	-0.08	0.19	-0.34
ER	-0.50	0.07	-0.65	0.38	1	-0.56	0.78	0.49	0.12	-0.21	-0.59	-0.36	-0.20	-0.79
VOL	-0.10	-0.79	0.47	-0.52	-0.56	1	-0.63	-0.34	-0.49	-0.41	0.86	0.33	-0.35	0.82
N. IMP	-0.20	0.32	-0.43	0.17	0.78	-0.63	1	0.61	0.31	-0.01	-0.51	-0.32	0.06	-0.83
WGI v1	0.07	0.24	0.05	0.12	0.49	-0.34	0.61	1	0.33	0.19	-0.12	-0.25	0.36	-0.58
WGI v2	0.25	0.51	0.10	0.21	0.12	-0.49	0.31	0.33	1	0.68	-0.12	0.17	0.67	-0.42
WGI v3	0.57	0.68	0.30	0.16	-0.21	-0.41	-0.01	0.19	0.68	1	-0.12	0.38	0.84	-0.14
WGI v4	0.10	-0.61	0.73	-0.39	-0.59	0.86	-0.51	-0.12	-0.12	-0.12	1	0.54	-0.01	0.75
WGI v5	0.17	-0.12	0.49	-0.08	-0.36	0.33	-0.32	-0.25	0.17	0.38	0.54	1	0.33	0.45
WGI v6	0.63	0.67	0.42	0.19	-0.20	-0.35	0.06	0.36	0.67	0.84	-0.01	0.33	1	-0.19
HER	0.19	-0.51	0.56	-0.34	-0.79	0.82	-0.83	-0.58	-0.42	-0.14	0.75	0.45	-0.19	1

Table A.27: Algeria; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.010 x10e12 (0.18 x10e11)	-0.010 x10e12 (0.19 x10e11)	-0.020 x10e12 (0.2 x10e11)	-0.010 x10e12 (0.2 x10e11)	-0.010 x10e12 (0.19 x10e11)	-0.010 x10e12 (0.19 x10e11)	-0.010 x10e12 (0.18 x10e11)	-0.020 x10e12 (0.2 x10e11)
GDP PC	0.110 x10e7 (0.8 x10e6)	0.120 x10e7 (0.97 x10e6)	0.130 x10e7 (0.94 x10e6)	0.10 x10e7 (0.85 x10e6)	0.110 x10e7 (0.11 x10e7)	0.810 x10e6 (0.89 x10e6)	0.170 x10e7 (0.1 x10e7)	0.920 x10e6 (0.86 x10e6)
PCOE	0.130 x10e11 (0.19 x10e11)	0.130 x10e11 (0.2 x10e11)	0.150 x10e11 (0.2 x10e11)	0.110 x10e11 (0.21 x10e11)	0.130 x10e11 (0.2 x10e11)	0.120 x10e11 (0.19 x10e11)	0.140 x10e11 (0.19 x10e11)	0.130 x10e11 (0.2 x10e11)
CPI	-0.030 x10e9 (0.98 x10e8)	-0.030 x10e9 (0.1 x10e9)	-0.020 x10e7 (0.11 x10e9)	-0.030 x10e9 (0.1 x10e9)	-0.030 x10e9 (0.1 x10e9)	0.880 x10e7 (0.11 x10e9)	0.580 x10e7 (0.1 x10e9)	-0.010 x10e9 (0.1 x10e9)
ER	-0.050 x10e8 (0.56 x10e7)	-0.050 x10e8 (0.57 x10e7)	-0.060 x10e8 (0.57 x10e7)	-0.060 x10e8 (0.58 x10e7)	-0.060 x10e8 (0.64 x10e7)	-0.010 x10e9 (0.1 x10e8)	-0.020 x10e8 (0.64 x10e7)	-0.070 x10e8 (0.6 x10e7)
VOL	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)	0** x10e2 (0 x10)
N. IMP	0.48*** x10e9 (0.14 x10e9)	0.47*** x10e9 (0.15 x10e9)	0.45*** x10e9 (0.15 x10e9)	0.46** x10e9 (0.16 x10e9)	0.48*** x10e9 (0.15 x10e9)	0.52*** x10e9 (0.15 x10e9)	0.41** x10e9 (0.15 x10e9)	0.48*** x10e9 (0.14 x10e9)
WGI v 1		0.50 x10e8 (0.22 x10e9)						
WGI v 2			0.670 x10e8 (0.12 x10e9)					
WGI v 3				-0.030 x10e9 (0.12 x10e9)				
WGI v 4					-0.090 x10e8 (0.92 x10e8)			
WGI v 5						0.110 x10e9 (0.15 x10e9)		
WGI v 6							-0.090 x10e9 (0.92 x10e8)	
HER								0.830 x10e8 (0.15 x10e9)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	12877.59	13275.72	13166.39	13268.32	13295.24	13066.21	12859.14	13163.28
R2	0.805	0.806	0.809	0.806	0.805	0.812	0.818	0.809
adj R2	0.732	0.715	0.720	0.715	0.714	0.724	0.733	0.720

Table A.28: Nigeria; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.74	-0.76	-0.04	0.45	0.06	0.76	-0.23	0.34	-0.59	0.29	0.43	0.28	0.61
GDP PC	0.74	1	-0.74	-0.30	0.32	0.09	0.61	-0.57	0.09	-0.51	0.57	0.49	0.62	0.68
PCOE	-0.76	-0.74	1	-0.19	-0.78	-0.26	-0.91	0.22	-0.46	0.54	-0.08	-0.67	-0.51	-0.71
CPI	-0.04	-0.30	-0.19	1	0.42	0.15	0.25	0.32	0.09	0.02	-0.37	0.01	0.03	-0.12
ER	0.45	0.32	-0.78	0.42	1	0.36	0.79	0.04	0.55	-0.45	-0.35	0.81	0.44	0.59
VOL	0.06	0.09	-0.26	0.15	0.36	1	0.49	-0.11	0.44	-0.23	-0.13	0.35	0.14	0.38
N. IMP	0.76	0.61	-0.91	0.25	0.79	0.49	1	-0.13	0.58	-0.62	0.00	0.63	0.38	0.70
WGI v1	-0.23	-0.57	0.22	0.32	0.04	-0.11	-0.13	1	0.34	0.26	-0.45	-0.12	-0.47	-0.29
WGI v2	0.34	0.09	-0.46	0.09	0.55	0.44	0.58	0.34	1	-0.31	-0.37	0.56	-0.02	0.39
WGI v3	-0.59	-0.51	0.54	0.02	-0.45	-0.23	-0.62	0.26	-0.31	1	-0.22	-0.50	-0.42	-0.73
WGI v4	0.29	0.57	-0.08	-0.37	-0.35	-0.13	0.00	-0.45	-0.37	-0.22	1	-0.04	0.37	0.28
WGI v5	0.43	0.49	-0.67	0.01	0.81	0.35	0.63	-0.12	0.56	-0.50	-0.04	1	0.64	0.73
WGI v6	0.28	0.62	-0.51	0.03	0.44	0.14	0.38	-0.47	-0.02	-0.42	0.37	0.64	1	0.62
HER	0.61	0.68	-0.71	-0.12	0.59	0.38	0.70	-0.29	0.39	-0.73	0.28	0.73	0.62	1

Table A.29: Nigeria; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	-0.080 x10e11 <i>(0.72 x10e10)</i>	-0.050 x10e11 <i>(0.77 x10e10)</i>	-0.010 x10e12 <i>(0.78 x10e10)</i>	-0.050 x10e11 <i>(0.75 x10e10)</i>	-0.080 x10e11 <i>(0.81 x10e10)</i>	-0.070 x10e11 <i>(0.77 x10e10)</i>	-0.080 x10e11 <i>(0.75 x10e10)</i>	-0.010 x10e12 <i>(0.1 x10e11)</i>
GDP PC	0.370 x10e5 <i>(0.87 x10e5)</i>	0.540 x10e5 <i>(0.89 x10e5)</i>	0.760 x10e5 <i>(0.97 x10e5)</i>	0.420 x10e5 <i>(0.87 x10e5)</i>	0.360 x10e5 <i>(0.91 x10e5)</i>	0.390 x10e5 <i>(0.9 x10e5)</i>	0.320 x10e5 <i>(0.92 x10e5)</i>	0.650 x10e5 <i>(0.97 x10e5)</i>
PCOE	0.14** x10e11 <i>(0.55 x10e10)</i>	0.13** x10e11 <i>(0.56 x10e10)</i>	0.15** x10e11 <i>(0.57 x10e10)</i>	0.110 x10e11 <i>(0.6 x10e10)</i>	0.13** x10e11 <i>(0.6 x10e10)</i>	0.14** x10e11 <i>(0.58 x10e10)</i>	0.13** x10e11 <i>(0.58 x10e10)</i>	0.14** x10e11 <i>(0.57 x10e10)</i>
CPI	-0.020 x10e10 <i>(0.11 x10e9)</i>	-0.020 x10e10 <i>(0.11 x10e9)</i>	-0.030 x10e10 <i>(0.17 x10e9)</i>	-0.10 x10e9 <i>(0.13 x10e9)</i>	-0.020 x10e10 <i>(0.14 x10e9)</i>	-0.020 x10e10 <i>(0.12 x10e9)</i>	-0.020 x10e10 <i>(0.12 x10e9)</i>	-0.020 x10e10 <i>(0.14 x10e9)</i>
ER	-0.080 x10e8 <i>(0.69 x10e7)</i>	-0.010 x10e9 <i>(0.72 x10e7)</i>	-0.070 x10e8 <i>(0.7 x10e7)</i>	-0.010 x10e9 <i>(0.74 x10e7)</i>	-0.080 x10e8 <i>(0.72 x10e7)</i>	-0.010 x10e9 <i>(0.86 x10e7)</i>	-0.080 x10e8 <i>(0.76 x10e7)</i>	-0.040 x10e8 <i>(0.87 x10e7)</i>
VOL	0.12** x10 <i>(0.04 x10)</i>	0.11** x10 <i>(0.04 x10)</i>	0.13** x10 <i>(0.04 x10)</i>	0.1** x10 <i>(0.04 x10)</i>	0.12** x10 <i>(0.05 x10)</i>	0.12** x10 <i>(0.04 x10)</i>	0.12** x10 <i>(0.04 x10)</i>	0.13** x10 <i>(0.04 x10)</i>
N. IMP	0.130 x10e9 <i>(0.12 x10e9)</i>	0.140 x10e9 <i>(0.12 x10e9)</i>	0.160 x10e9 <i>(0.12 x10e9)</i>	0.110 x10e9 <i>(0.12 x10e9)</i>	0.130 x10e9 <i>(0.12 x10e9)</i>	0.150 x10e9 <i>(0.12 x10e9)</i>	0.130 x10e9 <i>(0.12 x10e9)</i>	0.130 x10e9 <i>(0.12 x10e9)</i>
WGI v 1		-0.030 x10e9 <i>(0.27 x10e8)</i>						
WGI v 2			0.270 x10e9 <i>(0.28 x10e9)</i>					
WGI v 3				0.130 x10e9 <i>(0.12 x10e9)</i>				
WGI v 4					-0.030 x10e9 <i>(0.28 x10e9)</i>			
WGI v 5						-0.030 x10e9 <i>(0.66 x10e8)</i>		
WGI v 6							0.280 x10e8 <i>(0.1 x10e9)</i>	
HER								0.520 x10e8 <i>(0.69 x10e8)</i>
N	19.00	19	19	19	19	19	19	19
df	12	11	11	11	11	11	11	11
RMSE	6471.71	6494.60	6496.65	6431.41	6756.38	6692.16	6736.38	6591.10
R2	0.766	0.784	0.784	0.789	0.767	0.771	0.768	0.778
adj R2	0.650	0.647	0.647	0.654	0.618	0.625	0.621	0.637

Table A.30: Equatorial Guinea; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.66	-0.21	0.15	-0.54	0.61	-0.05	0.20	-0.29	-0.04	-0.28	0.42	0.49	-0.10
GDP PC	0.66	1	-0.01	0.43	-0.79	0.43	-0.45	0.55	-0.19	-0.51	-0.01	0.63	0.71	0.03
PCOE	-0.21	-0.01	1	0.43	-0.40	-0.83	-0.82	0.14	0.57	-0.38	0.45	0.38	0.29	0.69
CPI	0.15	0.43	0.43	1	-0.49	-0.07	-0.52	0.31	0.60	-0.57	0.49	0.50	0.49	0.55
ER	-0.54	-0.79	-0.40	-0.49	1	-0.03	0.72	-0.58	-0.09	0.66	-0.18	-0.82	-0.77	-0.45
VOL	0.61	0.43	-0.83	-0.07	-0.03	1	0.52	0.08	-0.54	0.16	-0.43	0.00	0.09	-0.58
N. IMP	-0.05	-0.45	-0.82	-0.52	0.72	0.52	1	-0.38	-0.43	0.62	-0.41	-0.58	-0.57	-0.61
WGI v1	0.20	0.55	0.14	0.31	-0.58	0.08	-0.38	1	0.11	-0.82	-0.05	0.79	0.84	0.26
WGI v2	-0.29	-0.19	0.57	0.60	-0.09	-0.54	-0.43	0.11	1	-0.34	0.53	0.22	0.20	0.74
WGI v3	-0.04	-0.51	-0.38	-0.57	0.66	0.16	0.62	-0.82	-0.34	1	-0.22	-0.76	-0.74	-0.55
WGI v4	-0.28	-0.01	0.45	0.49	-0.18	-0.43	-0.41	-0.05	0.53	-0.22	1	0.12	-0.06	0.55
WGI v5	0.42	0.63	0.38	0.50	-0.82	0.00	-0.58	0.79	0.22	-0.76	0.12	1	0.90	0.60
WGI v6	0.49	0.71	0.29	0.49	-0.77	0.09	-0.57	0.84	0.20	-0.74	-0.06	0.90	1	0.38
HER	-0.10	0.03	0.69	0.55	-0.45	-0.58	-0.61	0.26	0.74	-0.55	0.55	0.60	0.38	1

Table A.31: Equatorial Guinea; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.08* x10e11 (0.42 x10e10)	-0.010 x10e12 (0.11 x10e11)	-0.02** x10e12 (0.6 x10e10)	-0.020 x10e11 (0.82 x10e10)	-0.020 x10e12 (0.86 x10e10)	-0.080 x10e11 (0.12 x10e11)	-0.01* x10e12 (0.59 x10e10)	-0.040 x10e10 (0.1 x10e11)
GDP PC	0.620 x10e5 (0.66 x10e5)	0.590 x10e5 (0.71 x10e5)	0.27* x10e6 (0.11 x10e6)	0.380 x10e5 (0.72 x10e5)	0.580 x10e5 (0.65 x10e5)	0.630 x10e5 (0.82 x10e5)	0.590 x10e5 (0.63 x10e5)	0.380 x10e5 (0.73 x10e5)
PCOE	0.20 x10e10 (0.21 x10e10)	0.210 x10e10 (0.23 x10e10)	-0.040 x10e11 (0.31 x10e10)	0.240 x10e10 (0.22 x10e10)	0.190 x10e10 (0.21 x10e10)	0.20 x10e10 (0.23 x10e10)	0.170 x10e10 (0.2 x10e10)	0.260 x10e10 (0.22 x10e10)
CPI	0.680 x10e7 (0.13 x10e8)	0.80 x10e7 (0.14 x10e8)	-0.090 x10e8 (0.13 x10e8)	0.110 x10e8 (0.14 x10e8)	0.490 x10e7 (0.13 x10e8)	0.680 x10e7 (0.14 x10e8)	0.980 x10e6 (0.13 x10e8)	0.850 x10e7 (0.13 x10e8)
ER	0.490 x10e10 (0.27 x10e10)	0.740 x10e10 (0.78 x10e10)	0.15** x10e11 (0.52 x10e10)	0.450 x10e9 (0.56 x10e10)	0.110 x10e11 (0.61 x10e10)	0.480 x10e10 (0.87 x10e10)	0.91* x10e10 (0.41 x10e10)	-0.080 x10e10 (0.72 x10e10)
VOL	00 x10e2 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10e2 (0 x10)	00 x10 (0 x10)	00 x10e2 (0 x10)	00 x10 (0 x10)	00 x10e2 (0 x10)
N. IMP	0.340 x10e9 (0.35 x10e9)	0.320 x10e9 (0.38 x10e9)	0.520 x10e9 (0.3 x10e9)	0.280 x10e9 (0.36 x10e9)	0.350 x10e9 (0.35 x10e9)	0.340 x10e9 (0.41 x10e9)	0.30 x10e9 (0.34 x10e9)	0.640 x10e8 (0.48 x10e9)
WGI v 1		0.560 x10e7 (0.17 x10e8)						
WGI v 2			-0.010 x10e10 (0.64 x10e8)					
WGI v 3				-0.060 x10e9 (0.68 x10e8)				
WGI v 4					0.710 x10e8 (0.65 x10e8)			
WGI v 5						-0.080 x10e7 (0.69 x10e8)		
WGI v 6							0.610 x10e8 (0.47 x10e8)	
HER								-0.020 x10e9 (0.17 x10e8)
N	14.00	14	14	14	14	14	14	14
df	7	6	6	6	6	6	6	6
RMSE	3938.62	4214.85	3198.01	3991.98	3886.93	4254.15	3756.51	4011.93
R2	0.521	0.529	0.729	0.578	0.600	0.521	0.626	0.574
adj R2	0.110	-0.019	0.413	0.086	0.133	-0.039	0.190	0.076

Table A.32: Libya; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.18	0.33	0.21	0.42	-0.32	-0.23	-0.15	-0.16	-0.45	-0.11	-0.26	0.03	-0.41
GDP PC	0.18	1	0.63	-0.18	-0.43	0.22	0.03	0.26	0.22	0.25	0.33	0.55	0.29	0.36
PCOE	0.33	0.63	1	-0.14	-0.30	0.07	0.12	0.23	-0.19	0.27	0.31	0.38	0.31	0.33
CPI	0.21	-0.18	-0.14	1	0.27	-0.15	-0.18	-0.22	-0.14	-0.09	-0.14	-0.20	-0.01	-0.17
ER	0.42	-0.43	-0.30	0.27	1	-0.50	-0.69	-0.62	0.07	-0.87	-0.70	-0.86	-0.62	-0.80
VOL	-0.32	0.22	0.07	-0.15	-0.50	1	0.52	-0.33	0.72	0.23	-0.20	0.09	-0.23	0.06
N. IMP	-0.23	0.03	0.12	-0.18	-0.69	0.52	1	0.30	0.05	0.55	0.34	0.39	0.33	0.29
WGI v1	-0.15	0.26	0.23	-0.22	-0.62	-0.33	0.30	1	-0.65	0.67	0.95	0.84	0.87	0.78
WGI v2	-0.16	0.22	-0.19	-0.14	0.07	0.72	0.05	-0.65	1	-0.37	-0.61	-0.34	-0.62	-0.42
WGI v3	-0.45	0.25	0.27	-0.09	-0.87	0.23	0.55	0.67	-0.37	1	0.72	0.86	0.61	0.89
WGI v4	-0.11	0.33	0.31	-0.14	-0.70	-0.20	0.34	0.95	-0.61	0.72	1	0.90	0.96	0.81
WGI v5	-0.26	0.55	0.38	-0.20	-0.86	0.09	0.39	0.84	-0.34	0.86	0.90	1	0.82	0.94
WGI v6	0.03	0.29	0.31	-0.01	-0.62	-0.23	0.33	0.87	-0.62	0.61	0.96	0.82	1	0.72
HER	-0.41	0.36	0.33	-0.17	-0.80	0.06	0.29	0.78	-0.42	0.89	0.81	0.94	0.72	1

Table A.33: Libya; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.440 x10e9 (0.73 x10e9)	-0.050 x10e10 (0.14 x10e10)	0.250 x10e9 (0.72 x10e9)	0.260 x10e9 (0.11 x10e10)	0.430 x10e9 (0.12 x10e10)	0.440 x10e9 (0.76 x10e9)	0.130 x10e9 (0.92 x10e9)	-0.020 x10e11 (0.14 x10e10)
GDP PC	-0.070 x10e6 (0.18 x10e6)	0.210 x10e6 (0.39 x10e6)	-0.010 x10e7 (0.18 x10e6)	-0.050 x10e6 (0.21 x10e6)	-0.070 x10e6 (0.21 x10e6)	-0.070 x10e6 (0.22 x10e6)	-0.050 x10e6 (0.19 x10e6)	-0.080 x10e6 (0.17 x10e6)
PCOE	-0.030 x10e10 (0.76 x10e9)	-0.040 x10e10 (0.79 x10e9)	-0.050 x10e10 (0.75 x10e9)	-0.020 x10e10 (0.8 x10e9)	-0.030 x10e10 (0.88 x10e9)	-0.030 x10e10 (0.82 x10e9)	-0.010 x10e10 (0.8 x10e9)	-0.040 x10e10 (0.72 x10e9)
CPI	0.340 x10e7 (0.21 x10e8)	0.450 x10e6 (0.22 x10e8)	0.110 x10e8 (0.21 x10e8)	0.520 x10e7 (0.23 x10e8)	0.350 x10e7 (0.22 x10e8)	0.320 x10e7 (0.25 x10e8)	0.240 x10e7 (0.22 x10e8)	-0.050 x10e8 (0.21 x10e8)
ER	-0.070 x10e6 (0.61 x10e6)	0.80 x10e6 (0.12 x10e7)	-0.020 x10e7 (0.6 x10e6)	-0.040 x10e5 (0.7 x10e6)	-0.060 x10e6 (0.86 x10e6)	-0.070 x10e6 (0.64 x10e6)	0.220 x10e6 (0.8 x10e6)	0.140 x10e6 (0.6 x10e6)
VOL	0.1*** x10 (0.01 x10)	0.09*** x10 (0.01 x10)	0.1*** x10 (0.01 x10)	0.1*** x10 (0.01 x10)	0.1*** x10 (0.01 x10)	0.1*** x10 (0.01 x10)	0.09*** x10 (0.01 x10)	0.1*** x10 (0.01 x10)
N. IMP	-0.02*** x10e10 (0.28 x10e8)	-0.02*** x10e10 (0.29 x10e8)	-0.02*** x10e10 (0.28 x10e8)	-0.02*** x10e10 (0.33 x10e8)	-0.02*** x10e10 (0.31 x10e8)	-0.02*** x10e10 (0.38 x10e8)	-0.02*** x10e10 (0.28 x10e8)	-0.02*** x10e10 (0.27 x10e8)
WGI v 1		0.690 x10e7 (0.83 x10e7)						
WGI v 2			0.210 x10e8 (0.15 x10e8)					
WGI v 3				0.440 x10e7 (0.19 x10e8)				
WGI v 4					0.230 x10e6 (0.15 x10e8)			
WGI v 5						-0.040 x10e7 (0.22 x10e8)		
WGI v 6							0.630 x10e7 (0.11 x10e8)	
HER								0.380 x10e8 (0.23 x10e8)
N	22.00	22	22	22	22	22	22	22
df	15	14	14	14	14	14	14	14
RMSE	1149.32	1161.42	1114.99	1187.34	1189.65	1189.64	1175.47	1091.33
R2	0.941	0.944	0.948	0.942	0.941	0.941	0.943	0.951
adj R2	0.918	0.916	0.923	0.912	0.912	0.912	0.914	0.926

Table A.34: Cameroon; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.29	-0.23	0.37	0.20	0.89	0.53	-0.40	-0.11	-0.23	-0.16	0.29	0.13	0.01
GDP PC	0.29	1	-0.47	0.02	-0.63	0.37	0.35	-0.60	0.13	-0.40	0.08	0.52	0.55	0.14
PCOE	-0.23	-0.47	1	0.25	-0.03	-0.29	-0.27	0.68	0.05	0.12	-0.07	-0.15	-0.16	0.22
CPI	0.37	0.02	0.25	1	0.04	0.31	0.17	0.07	-0.25	-0.25	-0.12	-0.09	0.05	0.32
ER	0.20	-0.63	-0.03	0.04	1	0.19	0.19	-0.18	-0.21	0.00	-0.50	-0.33	-0.71	-0.30
VOL	0.89	0.37	-0.29	0.31	0.19	1	0.84	-0.53	-0.28	-0.43	-0.28	0.15	0.13	-0.01
N. IMP	0.53	0.35	-0.27	0.17	0.19	0.84	1	-0.51	-0.36	-0.53	-0.39	-0.14	0.08	0.06
WGI v1	-0.40	-0.60	0.68	0.07	-0.18	-0.53	-0.51	1	-0.01	0.39	0.34	-0.34	0.00	0.17
WGI v2	-0.11	0.13	0.05	-0.25	-0.21	-0.28	-0.36	-0.01	1	0.33	-0.05	0.46	0.21	0.08
WGI v3	-0.23	-0.40	0.12	-0.25	0.00	-0.43	-0.53	0.39	0.33	1	0.38	0.26	-0.12	-0.24
WGI v4	-0.16	0.08	-0.07	-0.12	-0.50	-0.28	-0.39	0.34	-0.05	0.38	1	0.11	0.34	0.07
WGI v5	0.29	0.52	-0.15	-0.09	-0.33	0.15	-0.14	-0.34	0.46	0.26	0.11	1	0.06	-0.32
WGI v6	0.13	0.55	-0.16	0.05	-0.71	0.13	0.08	0.00	0.21	-0.12	0.34	0.06	1	0.54
HER	0.01	0.14	0.22	0.32	-0.30	-0.01	0.06	0.17	0.08	-0.24	0.07	-0.32	0.54	1

Table A.35: Cameroon; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.060 x10e10 (0.39 x10e9)	-0.060 x10e10 (0.5 x10e9)	-0.030 x10e10 (0.11 x10e10)	-0.020 x10e10 (0.39 x10e9)	-0.060 x10e10 (0.4 x10e9)	-0.060 x10e10 (0.47 x10e9)	-0.040 x10e10 (0.44 x10e9)	-0.070 x10e10 (0.65 x10e9)
GDP PC	0.85** x10e6 (0.36 x10e6)	0.85** x10e6 (0.38 x10e6)	0.750 x10e6 (0.49 x10e6)	0.8** x10e6 (0.32 x10e6)	0.97* x10e6 (0.47 x10e6)	0.85** x10e6 (0.37 x10e6)	0.87** x10e6 (0.36 x10e6)	0.85** x10e6 (0.37 x10e6)
PCOE	0.20 x10e9 (0.32 x10e9)	0.20 x10e9 (0.36 x10e9)	0.250 x10e9 (0.36 x10e9)	0.220 x10e9 (0.28 x10e9)	0.230 x10e9 (0.34 x10e9)	0.20 x10e9 (0.33 x10e9)	0.170 x10e9 (0.32 x10e9)	0.20 x10e9 (0.33 x10e9)
CPI	0.240 x10e6 (0.47 x10e7)	0.280 x10e6 (0.53 x10e7)	-0.030 x10e7 (0.52 x10e7)	0.280 x10e7 (0.44 x10e7)	0.540 x10e6 (0.5 x10e7)	0.550 x10e6 (0.54 x10e7)	0.110 x10e7 (0.48 x10e7)	0.180 x10e6 (0.5 x10e7)
ER	0.4* x10e7 (0.19 x10e7)	0.390 x10e7 (0.35 x10e7)	0.220 x10e7 (0.61 x10e7)	0.120 x10e7 (0.21 x10e7)	0.360 x10e7 (0.22 x10e7)	0.360 x10e7 (0.3 x10e7)	0.230 x10e7 (0.25 x10e7)	0.410 x10e7 (0.24 x10e7)
VOL	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)
N. IMP	0.340 x10e8 (0.36 x10e8)	0.340 x10e8 (0.38 x10e8)	0.250 x10e8 (0.48 x10e8)	0.390 x10e8 (0.32 x10e8)	0.430 x10e8 (0.42 x10e8)	0.330 x10e8 (0.39 x10e8)	0.340 x10e8 (0.36 x10e8)	0.340 x10e8 (0.38 x10e8)
WGI v 1		-0.050 x10e6 (0.24 x10e7)						
WGI v 2			-0.050 x10e8 (0.17 x10e8)					
WGI v 3				-0.010 x10e9 (0.47 x10e7)				
WGI v 4					-0.030 x10e8 (0.64 x10e7)			
WGI v 5						-0.080 x10e7 (0.57 x10e7)		
WGI v 6							-0.050 x10e8 (0.49 x10e7)	
HER								0.80 x10e6 (0.93 x10e7)
N	20.00	20	20	20	20	20	20	20
df	13	12	12	12	12	12	12	12
RMSE	716.92	746.18	743.33	633.77	740.84	745.56	713.16	745.96
R2	0.660	0.660	0.663	0.755	0.665	0.661	0.689	0.660
adj R2	0.503	0.462	0.466	0.612	0.469	0.463	0.508	0.462

Table A.36: Mozambique; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.49	-0.67	-0.22	0.51	0.45	-0.35	-0.52	-0.63	-0.72	-0.07	-0.55	-0.54	-0.34
GDP PC	0.49	1	-0.54	-0.52	-0.11	-0.04	-0.39	0.07	-0.16	-0.10	0.52	0.04	0.17	0.10
PCOE	-0.67	-0.54	1	0.43	-0.64	-0.35	0.38	0.55	0.80	0.70	0.18	0.65	0.52	0.49
CPI	-0.22	-0.52	0.43	1	-0.12	0.36	0.15	0.15	0.25	0.20	-0.05	0.19	-0.01	0.21
ER	0.51	-0.11	-0.64	-0.12	1	0.36	-0.37	-0.91	-0.94	-0.85	-0.71	-0.91	-0.85	-0.80
VOL	0.45	-0.04	-0.35	0.36	0.36	1	-0.22	-0.42	-0.31	-0.51	-0.12	-0.46	-0.55	-0.15
N. IMP	-0.35	-0.39	0.38	0.15	-0.37	-0.22	1	0.39	0.34	0.43	0.23	0.30	0.30	0.33
WGI v1	-0.52	0.07	0.55	0.15	-0.91	-0.42	0.39	1	0.87	0.82	0.64	0.96	0.93	0.70
WGI v2	-0.63	-0.16	0.80	0.25	-0.94	-0.31	0.34	0.87	1	0.87	0.53	0.90	0.81	0.75
WGI v3	-0.72	-0.10	0.70	0.20	-0.85	-0.51	0.43	0.82	0.87	1	0.54	0.87	0.85	0.79
WGI v4	-0.07	0.52	0.18	-0.05	-0.71	-0.12	0.23	0.64	0.53	0.54	1	0.65	0.67	0.76
WGI v5	-0.55	0.04	0.65	0.19	-0.91	-0.46	0.30	0.96	0.90	0.87	0.65	1	0.94	0.76
WGI v6	-0.54	0.17	0.52	-0.01	-0.85	-0.55	0.30	0.93	0.81	0.85	0.67	0.94	1	0.68
HER	-0.34	0.10	0.49	0.21	-0.80	-0.15	0.33	0.70	0.75	0.79	0.76	0.76	0.68	1

Table A.37: Mozambique; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.140 x10e9 (0.12 x10e9)	-0.040 x10e9 (0.11 x10e9)	-0.030 x10e10 (0.4 x10e9)	-0.050 x10e9 (0.29 x10e9)	0.170 x10e9 (0.37 x10e9)	0.520 x10e9 (0.57 x10e9)	0.870 x10e8 (0.21 x10e9)	-0.030 x10e10 (0.12 x10e10)
GDP PC	0.210 x10e6 (0.21 x10e6)	0.110 x10e6 (0.17 x10e6)	0.830 x10e5 (0.24 x10e6)	0.290 x10e6 (0.24 x10e6)	0.220 x10e6 (0.26 x10e6)	0.240 x10e6 (0.22 x10e6)	0.260 x10e6 (0.27 x10e6)	0.220 x10e6 (0.22 x10e6)
PCOE	-0.020 x10e10 (0.34 x10e9)	-0.020 x10e10 (0.27 x10e9)	0.560 x10e8 (0.39 x10e9)	-0.010 x10e10 (0.35 x10e9)	-0.010 x10e10 (0.37 x10e9)	-0.020 x10e10 (0.35 x10e9)	-0.080 x10e9 (0.41 x10e9)	-0.020 x10e10 (0.37 x10e9)
CPI	-0.020 x10e8 (0.72 x10e7)	-0.02* x10e9 (0.74 x10e7)	-0.020 x10e9 (0.15 x10e8)	-0.010 x10e8 (0.74 x10e7)	-0.020 x10e8 (0.99 x10e7)	-0.020 x10e8 (0.74 x10e7)	-0.010 x10e8 (0.79 x10e7)	0.190 x10e6 (0.96 x10e7)
ER	-0.010 x10e7 (0.12 x10e6)	-0.080 x10e6 (0.93 x10e5)	-0.080 x10e6 (0.12 x10e6)	-0.010 x10e7 (0.12 x10e6)	-0.010 x10e7 (0.15 x10e6)	-0.020 x10e7 (0.15 x10e6)	-0.020 x10e7 (0.15 x10e6)	-0.010 x10e7 (0.12 x10e6)
VOL	0.110 x10e2 (0.75 x10)	0.980 x10 (0.6 x10)	0.790 x10 (0.81 x10)	0.160 x10e2 (0.1 x10e2)	0.110 x10e2 (0.78 x10)	0.670 x10 (0.1 x10e2)	0.120 x10e2 (0.83 x10)	0.110 x10e2 (0.78 x10)
N. IMP	-0.020 x10e9 (0.3 x10e8)	-0.030 x10e9 (0.24 x10e8)	0.820 x10e7 (0.43 x10e8)	-0.040 x10e9 (0.34 x10e8)	-0.030 x10e9 (0.4 x10e8)	-0.030 x10e9 (0.31 x10e8)	-0.030 x10e9 (0.38 x10e8)	-0.030 x10e9 (0.33 x10e8)
WGI v 1		0.85** x10e7 (0.3 x10e7)						
WGI v 2			0.10 x10e8 (0.98 x10e7)					
WGI v 3				0.430 x10e7 (0.58 x10e7)				
WGI v 4					-0.080 x10e7 (0.97 x10e7)			
WGI v 5						-0.070 x10e8 (0.11 x10e8)		
WGI v 6							0.120 x10e7 (0.38 x10e7)	
HER								0.790 x10e7 (0.21 x10e8)
N	19.00	19	19	19	19	19	19	19
df	12	11	11	11	11	11	11	11
RMSE	738.04	586.28	734.10	752.55	770.63	755.35	767.24	765.78
R2	0.216	0.546	0.289	0.253	0.216	0.247	0.223	0.226
adj R2	-0.176	0.258	-0.164	-0.223	-0.283	-0.232	-0.271	-0.267

Table A.38: Tanzania; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	-0.11	-0.18	0.07	-0.18	0.20	0.01	0.41	0.25	0.02	0.09	-0.03	-0.03	-0.05
GDP PC	-0.11	1	0.62	-0.29	0.91	0.29	0.38	-0.09	-0.48	-0.71	-0.46	-0.72	-0.15	0.52
PCOE	-0.18	0.62	1	-0.17	0.60	0.33	0.41	-0.01	-0.55	-0.52	-0.37	-0.57	-0.27	0.56
CPI	0.07	-0.29	-0.17	1	-0.48	0.20	0.41	0.80	0.74	0.14	0.50	0.29	-0.23	-0.61
ER	-0.18	0.91	0.60	-0.48	1	0.27	0.24	-0.29	-0.63	-0.68	-0.62	-0.81	0.05	0.63
VOL	0.20	0.29	0.33	0.20	0.27	1	0.76	0.29	-0.18	-0.61	-0.45	-0.67	0.03	0.29
N. IMP	0.01	0.38	0.41	0.41	0.24	0.76	1	0.49	-0.17	-0.41	-0.38	-0.50	0.04	0.22
WGI v1	0.41	-0.09	-0.01	0.80	-0.29	0.29	0.49	1	0.51	0.10	0.33	0.11	-0.11	-0.34
WGI v2	0.25	-0.48	-0.55	0.74	-0.63	-0.18	-0.17	0.51	1	0.34	0.76	0.58	-0.25	-0.85
WGI v3	0.02	-0.71	-0.52	0.14	-0.68	-0.61	-0.41	0.10	0.34	1	0.41	0.81	0.35	-0.50
WGI v4	0.09	-0.46	-0.37	0.50	-0.62	-0.45	-0.38	0.33	0.76	0.41	1	0.72	-0.48	-0.70
WGI v5	-0.03	-0.72	-0.57	0.29	-0.81	-0.67	-0.50	0.11	0.58	0.81	0.72	1	-0.12	-0.74
WGI v6	-0.03	-0.15	-0.27	-0.23	0.05	0.03	0.04	-0.11	-0.25	0.35	-0.48	-0.12	1	0.26
HER	-0.05	0.52	0.56	-0.61	0.63	0.29	0.22	-0.34	-0.85	-0.50	-0.70	-0.74	0.26	1

Table A.39: Tanzania; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.010 x10e8 (0.17 x10e7)	-0.030 x10e7 (0.2 x10e7)	-0.010 x10e8 (0.21 x10e7)	0.140 x10e7 (0.17 x10e7)	-0.010 x10e8 (0.26 x10e7)	-0.010 x10e7 (0.19 x10e7)	0.920 x10e6 (0.21 x10e7)	-0.02** x10e10 (0.89 x10e8)
GDP PC	-0.060 x10e4 (0.41 x10e3)	-0.060 x10e4 (0.43 x10e3)	-0.060 x10e4 (0.51 x10e3)	-0.01** x10e5 (0.38 x10e3)	-0.060 x10e4 (0.55 x10e3)	-0.030 x10e4 (0.49 x10e3)	-0.01* x10e5 (0.48 x10e3)	-0.03*** x10e5 (0.98 x10e3)
PCOE	0.31* x10e7 (0.15 x10e7)	0.180 x10e7 (0.23 x10e7)	0.310 x10e7 (0.17 x10e7)	0.3** x10e7 (0.12 x10e7)	0.31* x10e7 (0.15 x10e7)	0.27* x10e7 (0.15 x10e7)	0.31** x10e7 (0.14 x10e7)	0.22* x10e7 (0.12 x10e7)
CPI	-0.010 x10e6 (0.31 x10e5)	-0.020 x10e5 (0.35 x10e5)	-0.010 x10e6 (0.33 x10e5)	-0.030 x10e6 (0.26 x10e5)	-0.010 x10e6 (0.33 x10e5)	0.360 x10e4 (0.35 x10e5)	-0.030 x10e6 (0.32 x10e5)	-0.020 x10e6 (0.25 x10e5)
ER	0.560 x10e5 (0.9 x10e5)	0.630 x10e5 (0.93 x10e5)	0.570 x10e5 (0.98 x10e5)	0.440 x10e5 (0.74 x10e5)	0.580 x10e5 (0.98 x10e5)	0.490 x10e5 (0.9 x10e5)	0.890 x10e5 (0.87 x10e5)	-0.03* x10e7 (0.15 x10e6)
VOL	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)	0.02*** x10 (0 x10)
N. IMP	0.890 x10e6 (0.57 x10e6)	0.880 x10e6 (0.58 x10e6)	0.890 x10e6 (0.6 x10e6)	0.830 x10e6 (0.47 x10e6)	0.890 x10e6 (0.6 x10e6)	0.880 x10e6 (0.56 x10e6)	0.670 x10e6 (0.55 x10e6)	0.380 x10e6 (0.49 x10e6)
WGI v 1		-0.020 x10e7 (0.28 x10e6)						
WGI v 2			0.110 x10e5 (0.29 x10e6)					
WGI v 3				-0.02** x10e7 (0.78 x10e5)				
WGI v 4					0.160 x10e5 (0.19 x10e6)			
WGI v 5						-0.020 x10e7 (0.19 x10e6)		
WGI v 6							-0.010 x10e7 (0.82 x10e5)	
HER								0.52** x10e7 (0.19 x10e7)
N	18.00	18	18	18	18	18	18	18
df	11	10	10	10	10	10	10	10
RMSE	9.40	9.59	9.86	7.70	9.85	9.35	8.81	7.43
R2	0.977	0.979	0.977	0.986	0.977	0.980	0.982	0.987
adj R2	0.965	0.964	0.962	0.977	0.962	0.965	0.969	0.978

Table A.40: Sudan; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	-0.56	0.26	-0.56	-0.45	0.98	0.61	0.08	0.54	0.27	0.57	-0.71	0.28	-0.67
GDP PC	-0.56	1	0.01	0.36	0.14	-0.50	-0.39	-0.06	-0.52	-0.54	-0.69	0.65	-0.65	0.72
PCOE	0.26	0.01	1	-0.33	-0.45	0.19	0.00	-0.70	0.52	0.09	0.20	-0.31	0.02	-0.26
CPI	-0.56	0.36	-0.33	1	0.83	-0.54	-0.41	0.41	-0.52	-0.49	-0.60	0.72	-0.43	0.80
ER	-0.45	0.14	-0.45	0.83	1	-0.44	-0.38	0.48	-0.54	-0.36	-0.50	0.54	-0.15	0.76
VOL	0.98	-0.50	0.19	-0.54	-0.44	1	0.57	0.18	0.48	0.31	0.52	-0.64	0.29	-0.65
N. IMP	0.61	-0.39	0.00	-0.41	-0.38	0.57	1	0.09	0.33	0.24	0.41	-0.43	0.10	-0.46
WGI v1	0.08	-0.06	-0.70	0.41	0.48	0.18	0.09	1	-0.45	-0.08	-0.16	0.17	-0.09	0.24
WGI v2	0.54	-0.52	0.52	-0.52	-0.54	0.48	0.33	-0.45	1	0.60	0.61	-0.44	0.45	-0.69
WGI v3	0.27	-0.54	0.09	-0.49	-0.36	0.31	0.24	-0.08	0.60	1	0.68	-0.34	0.64	-0.67
WGI v4	0.57	-0.69	0.20	-0.60	-0.50	0.52	0.41	-0.16	0.61	0.68	1	-0.52	0.69	-0.80
WGI v5	-0.71	0.65	-0.31	0.72	0.54	-0.64	-0.43	0.17	-0.44	-0.34	-0.52	1	-0.25	0.78
WGI v6	0.28	-0.65	0.02	-0.43	-0.15	0.29	0.10	-0.09	0.45	0.64	0.69	-0.25	1	-0.57
HER	-0.67	0.72	-0.26	0.80	0.76	-0.65	-0.46	0.24	-0.69	-0.67	-0.80	0.78	-0.57	1

Table A.41: Sudan; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	-0.050 x10e7 (0.48 x10e6)	-0.050 x10e7 (0.5 x10e6)	-0.060 x10e7 (0.53 x10e6)	-0.090 x10e7 (0.72 x10e6)	-0.020 x10e7 (0.66 x10e6)	-0.040 x10e7 (0.45 x10e6)	-0.050 x10e7 (0.51 x10e6)	0.180 x10e7 (0.26 x10e7)
GDP PC	0.710 x10e2	0.70 x10e2	0.440 x10e2	0.50 x10	0.950 x10e2	0.230 x10e2	0.690 x10e2	0.360 x10e2
PCOE	(0.15 x10e3)	(0.19 x10e3)	(0.17 x10e3)	(0.18 x10e3)	(0.16 x10e3)	(0.14 x10e3)	(0.16 x10e3)	(0.16 x10e3)
CPI	0.120 x10e7 (0.19 x10e7)	0.120 x10e7 (0.2 x10e7)	0.120 x10e7 (0.2 x10e7)	0.170 x10e7 (0.21 x10e7)	0.160 x10e7 (0.21 x10e7)	0.140 x10e7 (0.18 x10e7)	0.970 x10e6 (0.21 x10e7)	0.470 x10e6 (0.21 x10e7)
ER	-0.040 x10e5 (0.81 x10e4)	-0.040 x10e5 (0.89 x10e4)	-0.050 x10e5 (0.88 x10e4)	-0.020 x10e5 (0.84 x10e4)	-0.030 x10e5 (0.82 x10e4)	-0.060 x10e3 (0.77 x10e4)	-0.040 x10e5 (0.86 x10e4)	-0.040 x10e5 (0.81 x10e4)
VOL	0.04*** x10 (0 x10)	0.04*** x10 (0 x10)	0.04*** x10 (0 x10)	0.04*** x10 (0 x10)	0.04*** x10 (0 x10)	0.04*** x10 (0 x10)	0.04*** x10 (0.01 x10)	0.04*** x10 (0 x10)
N. IMP	0.16*** x10e6 (0.5 x10e5)	0.16*** x10e6 (0.52 x10e5)	0.15** x10e6 (0.59 x10e5)	0.16*** x10e6 (0.51 x10e5)	0.18*** x10e6 (0.59 x10e5)	0.16*** x10e6 (0.47 x10e5)	0.17** x10e6 (0.6 x10e5)	0.16*** x10e6 (0.51 x10e5)
WGI v 1		-0.010 x10e4 (0.16 x10e5)						
WGI v 2			0.320 x10e4 (0.77 x10e4)					
WGI v 3				10 x10e4 (0.13 x10e5)				
WGI v 4					-0.070 x10e5 (0.12 x10e5)			
WGI v 5						0.11* x10e5 (0.59 x10e4)		
WGI v 6							-0.050 x10e5 (0.15 x10e5)	
HER								-0.030 x10e6 (0.36 x10e5)
N	22.00	22	22	22	22	22	22	22
df	15	14	14	14	14	14	14	14
RMSE	1.14	1.18	1.17	1.16	1.17	1.06	1.18	1.15
R2	0.907	0.907	0.908	0.911	0.909	0.925	0.908	0.912
adj R2	0.870	0.861	0.862	0.866	0.864	0.888	0.862	0.868

Table A.42: Kenya; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	-0.02	-0.11	-0.12	-0.05	0.88	0.43	0.33	0.05	-0.17	-0.04	-0.03	0.55	0.07
GDP PC	-0.02	1	-0.18	-0.22	0.89	0.26	-0.72	-0.22	0.11	0.83	-0.71	0.84	0.51	-0.82
PCOE	-0.11	-0.18	1	-0.12	0.09	-0.07	-0.21	0.27	-0.38	-0.36	0.02	0.00	-0.30	-0.22
CPI	-0.12	-0.22	-0.12	1	-0.24	-0.20	0.24	-0.28	0.35	-0.22	0.26	-0.32	-0.24	0.23
ER	-0.05	0.89	0.09	-0.24	1	0.22	-0.73	0.05	-0.01	0.68	-0.75	0.87	0.52	-0.92
VOL	0.88	0.26	-0.07	-0.20	0.22	1	0.08	0.28	-0.08	0.01	-0.31	0.16	0.64	-0.16
N. IMP	0.43	-0.72	-0.21	0.24	-0.73	0.08	1	0.21	0.26	-0.59	0.69	-0.68	0.00	0.71
WGI v1	0.33	-0.22	0.27	-0.28	0.05	0.28	0.21	1	-0.47	-0.36	-0.04	-0.13	0.41	-0.11
WGI v2	0.05	0.11	-0.38	0.35	-0.01	-0.08	0.26	-0.47	1	0.39	0.11	0.19	-0.04	0.05
WGI v3	-0.17	0.83	-0.36	-0.22	0.68	0.01	-0.59	-0.36	0.39	1	-0.68	0.76	0.30	-0.63
WGI v4	-0.04	-0.71	0.02	0.26	-0.75	-0.31	0.69	-0.04	0.11	-0.68	1	-0.70	-0.31	0.65
WGI v5	-0.03	0.84	0.00	-0.32	0.87	0.16	-0.68	-0.13	0.19	0.76	-0.70	1	0.36	-0.83
WGI v6	0.55	0.51	-0.30	-0.24	0.52	0.64	0.00	0.41	-0.04	0.30	-0.31	0.36	1	-0.43
HER	0.07	-0.82	-0.22	0.23	-0.92	-0.16	0.71	-0.11	0.05	-0.63	0.65	-0.83	-0.43	1

Table A.43: Kenya; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intcept)	0.220 x10e6 (0.46 x10e6)	-0.010 x10e7 (0.52 x10e6)	0.850 x10e6 (0.58 x10e6)	0.50 x10e6 (0.73 x10e6)	-0.010 x10e8 (0.75 x10e6)	-0.020 x10e7 (0.58 x10e6)	-0.010 x10e7 (0.58 x10e6)	0.550 x10e6 (0.11 x10e7)
GDP PC	0.350 x10e2 (0.32 x10e2)	0.220 x10e2 (0.33 x10e2)	0.6* x10e2 (0.34 x10e2)	0.370 x10e2 (0.33 x10e2)	0.82** x10e2 (0.36 x10e2)	0.950 x10 (0.39 x10e2)	0.280 x10e2 (0.33 x10e2)	0.290 x10e2 (0.38 x10e2)
PCOE	-0.050 x10e7 (0.11 x10e7)	-0.050 x10e6 (0.12 x10e7)	-0.030 x10e6 (0.11 x10e7)	-0.060 x10e7 (0.12 x10e7)	-0.020 x10e7 (0.1 x10e7)	-0.080 x10e7 (0.12 x10e7)	-0.060 x10e7 (0.11 x10e7)	-0.060 x10e7 (0.12 x10e7)
CPI	0.130 x10e5 (0.16 x10e5)	0.130 x10e5 (0.16 x10e5)	0.160 x10e5 (0.15 x10e5)	0.150 x10e5 (0.18 x10e5)	0.780 x10e4 (0.15 x10e5)	-0.020 x10e5 (0.21 x10e5)	0.280 x10e4 (0.19 x10e5)	0.140 x10e5 (0.17 x10e5)
ER	-0.010 x10e6 (0.87 x10e4)	-0.010 x10e6 (0.91 x10e4)	-0.080 x10e5 (0.93 x10e4)	-0.020 x10e6 (0.99 x10e4)	-0.010 x10e6 (0.8 x10e4)	-0.02* x10e6 (0.98 x10e4)	-0.010 x10e6 (0.97 x10e4)	-0.020 x10e6 (0.94 x10e4)
VOL	0.02** x10 (0.01 x10)	0.03** x10 (0.01 x10)	0.02** x10 (0.01 x10)	0.02** x10 (0.01 x10)	0.02*** x10 (0.01 x10)	0.02** x10 (0.01 x10)	0.02** x10 (0.01 x10)	0.02** x10 (0.01 x10)
N. IMP	-0.030 x10e6 (0.36 x10e5)	-0.030 x10e6 (0.36 x10e5)	-0.040 x10e6 (0.36 x10e5)	-0.030 x10e6 (0.37 x10e5)	-0.060 x10e6 (0.35 x10e5)	-0.010 x10e6 (0.39 x10e5)	-0.010 x10e6 (0.4 x10e5)	-0.030 x10e6 (0.38 x10e5)
WGI v 1		0.310 x10e4 (0.25 x10e4)						
WGI v 2			-0.020 x10e6 (0.94 x10e4)					
WGI v 3				-0.040 x10e5 (0.87 x10e4)				
WGI v 4					0.2** x10e5 (0.91 x10e4)			
WGI v 5						0.120 x10e5 (0.1 x10e5)		
WGI v 6							0.580 x10e4 (0.6 x10e4)	
HER								-0.040 x10e5 (0.14 x10e5)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	0.90	0.88	0.85	0.92	0.81	0.89	0.90	0.92
R2	0.737	0.762	0.777	0.741	0.801	0.758	0.752	0.738
adj R2	0.638	0.651	0.672	0.620	0.709	0.645	0.637	0.616

Table A.44: Namibia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.29	-0.70	0.09	-0.36	0.76	0.08	0.61	-0.35	0.10	0.09	0.04	0.43	-0.03
GDP PC	0.29	1	-0.61	-0.52	0.32	0.02	-0.47	0.63	0.55	-0.10	-0.79	0.49	-0.06	-0.72
PCOE	-0.70	-0.61	1	0.02	0.00	-0.58	0.24	-0.71	-0.06	-0.10	0.33	-0.32	-0.31	0.23
CPI	0.09	-0.52	0.02	1	-0.29	0.16	0.67	-0.18	-0.47	0.49	0.70	0.03	0.47	0.59
ER	-0.36	0.32	0.00	-0.29	1	-0.35	-0.65	-0.14	0.74	-0.48	-0.59	0.67	-0.32	-0.49
VOL	0.76	0.02	-0.58	0.16	-0.35	1	0.19	0.32	-0.37	0.01	0.19	-0.18	0.27	0.12
N. IMP	0.08	-0.47	0.24	0.67	-0.65	0.19	1	-0.17	-0.64	0.48	0.76	-0.43	0.19	0.51
WGI v1	0.61	0.63	-0.71	-0.18	-0.14	0.32	-0.17	1	0.09	0.17	-0.34	0.25	0.04	-0.43
WGI v2	-0.35	0.55	-0.06	-0.47	0.74	-0.37	-0.64	0.09	1	-0.14	-0.77	0.53	-0.17	-0.66
WGI v3	0.10	-0.10	-0.10	0.49	-0.48	0.01	0.48	0.17	-0.14	1	0.40	-0.01	0.54	0.28
WGI v4	0.09	-0.79	0.33	0.70	-0.59	0.19	0.76	-0.34	-0.77	0.40	1	-0.43	0.32	0.64
WGI v5	0.04	0.49	-0.32	0.03	0.67	-0.18	-0.43	0.25	0.53	-0.01	-0.43	1	0.00	-0.37
WGI v6	0.43	-0.06	-0.31	0.47	-0.32	0.27	0.19	0.04	-0.17	0.54	0.32	0.00	1	0.26
HER	-0.03	-0.72	0.23	0.59	-0.49	0.12	0.51	-0.43	-0.66	0.28	0.64	-0.37	0.26	1

Table A.45: Namibia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	-0.030 x10e7 (0.8 x10e6)	-0.020 x10e8 (0.15 x10e7)	0.21** x10e7 (0.83 x10e6)	-0.02*** x10e8 (0.66 x10e6)	-0.020 x10e8 (0.14 x10e7)	0.110 x10e7 (0.82 x10e6)	-0.010 x10e8 (0.97 x10e6)	0.330 x10e6 (0.13 x10e7)
GDP PC	0.180 x10e2 (0.21 x10e3)	0.270 x10e2 (0.2 x10e3)	0.240 x10e3 (0.16 x10e3)	0.330 x10e2 (0.13 x10e3)	-0.010 x10e4 (0.24 x10e3)	0.310 x10e3 (0.2 x10e3)	-0.050 x10e3 (0.21 x10e3)	0.140 x10e3 (0.27 x10e3)
PCOE	-0.030 x10e7 (0.16 x10e7)	0.820 x10e6 (0.18 x10e7)	0.830 x10e6 (0.11 x10e7)	-0.010 x10e7 (0.96 x10e6)	0.190 x10e6 (0.16 x10e7)	0.370 x10e6 (0.13 x10e7)	-0.10 x10e7 (0.16 x10e7)	0.20 x10e6 (0.18 x10e7)
CPI	0.180 x10e5 (0.11 x10e5)	0.3* x10e5 (0.15 x10e5)	0.16* x10e5 (0.77 x10e4)	0.13* x10e5 (0.69 x10e4)	0.180 x10e5 (0.11 x10e5)	0.25** x10e5 (0.92 x10e4)	0.170 x10e5 (0.11 x10e5)	0.210 x10e5 (0.12 x10e5)
ER	0.520 x10e5 (0.53 x10e5)	0.90 x10e4 (0.61 x10e5)	0.550 x10e5 (0.37 x10e5)	0.17*** x10e6 (0.41 x10e5)	0.140 x10e6 (0.86 x10e5)	-0.010 x10e6 (0.48 x10e5)	0.110 x10e6 (0.66 x10e5)	0.270 x10e5 (0.64 x10e5)
VOL	-0.010 x10e2 (0.19 x10)	-0.020 x10e2 (0.21 x10)	-0.010 x10e2 (0.13 x10)	0.25* x10 (0.14 x10)	0.040 x10 (0.21 x10)	-0.010 x10e2 (0.15 x10)	0.10 x10 (0.23 x10)	-0.010 x10e2 (0.2 x10)
N. IMP	0.180 x10e6 (0.19 x10e6)	0.260 x10e6 (0.2 x10e6)	0.130 x10e6 (0.13 x10e6)	-0.020 x10e7 (0.14 x10e6)	-0.020 x10e5 (0.23 x10e6)	0.210 x10e6 (0.16 x10e6)	0.170 x10e4 (0.22 x10e6)	0.190 x10e6 (0.2 x10e6)
WGI v 1		0.230 x10e5 (0.17 x10e5)						
WGI v 2			-0.05*** x10e6 (0.14 x10e5)					
WGI v 3				0.42*** x10e5 (0.88 x10e4)				
WGI v 4					0.30 x10e5 (0.22 x10e5)			
WGI v 5						-0.04** x10e6 (0.14 x10e5)		
WGI v 6							0.230 x10e5 (0.16 x10e5)	
HER								-0.020 x10e6 (0.27 x10e5)
N	20.00	20	20	20	20	20	20	20
df	13	12	12	12	12	12	12	12
RMSE	2.02	1.97	1.39	1.24	1.96	1.62	1.94	2.06
R2	0.704	0.740	0.870	0.897	0.743	0.824	0.748	0.716
adj R2	0.567	0.589	0.794	0.837	0.593	0.722	0.601	0.550

Table A.46: Ghana; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.35	0.18	0.59	0.70	0.25	0.70	-0.03	-0.17	0.03	-0.28	-0.31	-0.05	0.11
GDP PC	0.35	1	0.20	-0.24	0.72	-0.49	0.16	0.30	0.67	-0.30	-0.03	0.34	0.21	0.31
PCOE	0.18	0.20	1	0.00	0.42	0.03	0.17	-0.12	0.33	-0.42	-0.53	-0.01	-0.12	0.24
CPI	0.59	-0.24	0.00	1	0.25	0.57	0.61	-0.54	-0.32	-0.03	-0.33	-0.12	-0.31	0.14
ER	0.70	0.72	0.42	0.25	1	-0.06	0.58	0.14	0.45	-0.54	-0.55	-0.01	-0.21	0.15
VOL	0.25	-0.49	0.03	0.57	-0.06	1	0.67	-0.16	-0.48	-0.07	-0.24	-0.22	-0.46	0.15
N. IMP	0.70	0.16	0.17	0.61	0.58	0.67	1	-0.12	-0.08	-0.18	-0.30	-0.07	-0.25	0.28
WGI v1	-0.03	0.30	-0.12	-0.54	0.14	-0.16	-0.12	1	0.07	-0.09	0.08	-0.32	-0.21	-0.28
WGI v2	-0.17	0.67	0.33	-0.32	0.45	-0.48	-0.08	0.07	1	-0.43	-0.07	0.56	0.16	0.18
WGI v3	0.03	-0.30	-0.42	-0.03	-0.54	-0.07	-0.18	-0.09	-0.43	1	0.69	-0.07	0.60	-0.22
WGI v4	-0.28	-0.03	-0.53	-0.33	-0.55	-0.24	-0.30	0.08	-0.07	0.69	1	0.31	0.66	0.00
WGI v5	-0.31	0.34	-0.01	-0.12	-0.01	-0.22	-0.07	-0.32	0.56	-0.07	0.31	1	0.33	0.46
WGI v6	-0.05	0.21	-0.12	-0.31	-0.21	-0.46	-0.25	-0.21	0.16	0.60	0.66	0.33	1	0.11
HER	0.11	0.31	0.24	0.14	0.15	0.15	0.28	-0.28	0.18	-0.22	0.00	0.46	0.11	1

Table A.47: Ghana; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.120 x10e6 (0.14 x10e6)	-0.070 x10e7 (0.52 x10e6)	0.210 x10e6 (0.5 x10e6)	0.190 x10e6 (0.37 x10e6)	0.160 x10e6 (0.44 x10e6)	-0.070 x10e6 (0.53 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.070 x10e7 (0.11 x10e7)
GDP PC	-0.050 x10e2 (0.18 x10e2)	-0.030 x10e3 (0.23 x10e2)	-0.070 x10e2 (0.22 x10e2)	-0.050 x10e2 (0.19 x10e2)	-0.050 x10e2 (0.19 x10e2)	-0.070 x10e2 (0.19 x10e2)	-0.020 x10e3 (0.17 x10e2)	-0.010 x10e3 (0.21 x10e2)
PCOE	0.960 x10e5 (0.15 x10e6)	0.190 x10e6 (0.16 x10e6)	0.120 x10e6 (0.19 x10e6)	0.10 x10e6 (0.16 x10e6)	10 x10e5 (0.16 x10e6)	0.110 x10e6 (0.16 x10e6)	0.10 x10e6 (0.13 x10e6)	0.80 x10e5 (0.15 x10e6)
CPI	0.620 x10e3 (0.48 x10e4)	-0.060 x10e4 (0.47 x10e4)	0.650 x10e3 (0.5 x10e4)	0.90 x10e3 (0.52 x10e4)	0.550 x10e3 (0.51 x10e4)	0.490 x10e3 (0.5 x10e4)	-0.080 x10e4 (0.41 x10e4)	0.540 x10e4 (0.77 x10e4)
ER	-0.010 x10e6 (0.82 x10e4)	-0.010 x10e6 (0.78 x10e4)	-0.010 x10e6 (0.1 x10e5)	-0.010 x10e6 (0.91 x10e4)	-0.010 x10e6 (0.84 x10e4)	-0.090 x10e5 (0.89 x10e4)	0.790 x10e4 (0.97 x10e4)	-0.050 x10e5 (0.11 x10e5)
VOL	0.020 x10 (0.01 x10)	0.020 x10 (0.01 x10)	0.020 x10 (0.01 x10)	0.020 x10 (0.01 x10)	0.020 x10 (0.01 x10)	0.020 x10 (0.01 x10)	0.02* x10 (0.01 x10)	0.03* x10 (0.01 x10)
N. IMP	-0.020 x10e6 (0.13 x10e5)	-0.020 x10e5 (0.15 x10e5)	-0.020 x10e6 (0.14 x10e5)	-0.020 x10e6 (0.14 x10e5)	-0.020 x10e6 (0.14 x10e5)	-0.010 x10e6 (0.14 x10e5)	-0.010 x10e6 (0.11 x10e5)	-0.020 x10e6 (0.16 x10e5)
WGI v 1		0.10 x10e5 (0.64 x10e4)						
WGI v 2			-0.010 x10e5 (0.68 x10e4)					
WGI v 3				-0.010 x10e5 (0.5 x10e4)				
WGI v 4					-0.050 x10e4 (0.58 x10e4)			
WGI v 5						0.270 x10e4 (0.72 x10e4)		
WGI v 6							0.14** x10e5 (0.53 x10e4)	
HER								0.120 x10e5 (0.15 x10e5)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	0.55	0.53	0.57	0.57	0.57	0.57	0.47	0.56
R2	0.464	0.543	0.466	0.466	0.465	0.469	0.638	0.486
adj R2	0.264	0.330	0.217	0.217	0.215	0.222	0.469	0.247

Table A.48: Botswana; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	-0.56	-0.21	0.22	-0.46	0.55	-0.02	-0.17	0.50	0.33	0.29	0.20	0.45	-0.29
GDP PC	-0.56	1	0.56	-0.34	0.70	-0.70	-0.20	0.69	-0.71	-0.47	-0.36	-0.20	-0.24	0.50
PCOE	-0.21	0.56	1	-0.55	0.63	-0.37	-0.42	0.28	-0.16	-0.31	0.07	-0.43	-0.40	0.34
CPI	0.22	-0.34	-0.55	1	-0.51	0.25	0.26	-0.11	0.22	0.43	-0.12	0.36	0.44	-0.58
ER	-0.46	0.70	0.63	-0.51	1	-0.40	-0.37	0.51	-0.65	-0.58	-0.12	-0.43	-0.70	0.15
VOL	0.55	-0.70	-0.37	0.25	-0.40	1	0.30	-0.47	0.42	0.32	0.42	0.11	0.06	-0.53
N. IMP	-0.02	-0.20	-0.42	0.26	-0.37	0.30	1	-0.44	-0.06	0.06	-0.07	0.13	0.28	0.15
WGI v1	-0.17	0.69	0.28	-0.11	0.51	-0.47	-0.44	1	-0.54	-0.26	-0.38	-0.03	-0.05	0.20
WGI v2	0.50	-0.71	-0.16	0.22	-0.65	0.42	-0.06	-0.54	1	0.50	0.49	0.25	0.26	-0.29
WGI v3	0.33	-0.47	-0.31	0.43	-0.58	0.32	0.06	-0.26	0.50	1	0.08	0.30	0.68	-0.17
WGI v4	0.29	-0.36	0.07	-0.12	-0.12	0.42	-0.07	-0.38	0.49	0.08	1	0.12	-0.10	-0.17
WGI v5	0.20	-0.20	-0.43	0.36	-0.43	0.11	0.13	-0.03	0.25	0.30	0.12	1	0.41	0.01
WGI v6	0.45	-0.24	-0.40	0.44	-0.70	0.06	0.28	-0.05	0.26	0.68	-0.10	0.41	1	0.18
HER	-0.29	0.50	0.34	-0.58	0.15	-0.53	0.15	0.20	-0.29	-0.17	-0.17	0.01	0.18	1

Table A.49: Botswana; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.150 x10e6 (0.12 x10e6)	0.170 x10e6 (0.13 x10e6)	0.140 x10e6 (0.15 x10e6)	0.310 x10e6 (0.27 x10e6)	0.160 x10e6 (0.13 x10e6)	0.150 x10e6 (0.13 x10e6)	0.310 x10e6 (0.2 x10e6)	0.20 x10e6 (0.13 x10e6)
GDP PC	-0.010 x10e4 (0.13 x10e3)	-0.010 x10e4 (0.14 x10e3)	-0.010 x10e4 (0.25 x10e3)	-0.020 x10e4 (0.2 x10e3)	-0.090 x10e3 (0.16 x10e3)	-0.010 x10e4 (0.16 x10e3)	-0.010 x10e4 (0.13 x10e3)	-0.090 x10e3 (0.14 x10e3)
PCOE	-0.010 x10e7 (0.8 x10e5)	-0.090 x10e6 (0.89 x10e5)	-0.010 x10e7 (0.91 x10e5)	-0.010 x10e7 (0.88 x10e5)	-0.010 x10e7 (0.87 x10e5)	-0.010 x10e7 (0.88 x10e5)	-0.020 x10e7 (0.94 x10e5)	-0.010 x10e6 (0.13 x10e6)
CPI	0.24* x10e4 (0.12 x10e4)	0.180 x10e4 (0.14 x10e4)	0.230 x10e4 (0.17 x10e4)	0.310 x10e4 (0.16 x10e4)	0.220 x10e4 (0.13 x10e4)	0.210 x10e4 (0.14 x10e4)	0.27* x10e4 (0.12 x10e4)	0.50 x10e2 (0.26 x10e4)
ER	-0.030 x10e3 (0.66 x10e2)	0.510 x10e2 (0.12 x10e3)	-0.030 x10e3 (0.74 x10e2)	0.720 x10e2 (0.16 x10e3)	-0.040 x10e3 (0.74 x10e2)	-0.030 x10e3 (0.73 x10e2)	-0.070 x10e3 (0.8 x10e2)	0.280 x10e2 (0.87 x10e2)
VOL	0.1** x10 (0.03 x10)	0.08* x10 (0.03 x10)	0.1* x10 (0.04 x10)	0.1** x10 (0.03 x10)	0.09** x10 (0.03 x10)	0.09** x10 (0.03 x10)	0.1** x10 (0.03 x10)	0.09** x10 (0.03 x10)
N. IMP	0.110 x10e4 (0.11 x10e5)	0.420 x10e4 (0.12 x10e5)	0.130 x10e4 (0.13 x10e5)	-0.090 x10e5 (0.18 x10e5)	0.140 x10e4 (0.12 x10e5)	0.270 x10e4 (0.13 x10e5)	-0.040 x10e5 (0.12 x10e5)	0.620 x10e4 (0.12 x10e5)
WGI v 1		-0.010 x10e5 (0.14 x10e4)						
WGI v 2			-0.020 x10e4 (0.49 x10e4)					
WGI v 3				-0.020 x10e5 (0.27 x10e4)				
WGI v 4					-0.060 x10e4 (0.12 x10e4)			
WGI v 5						-0.040 x10e4 (0.11 x10e4)		
WGI v 6							-0.020 x10e5 (0.19 x10e4)	
HER								-0.020 x10e5 (0.2 x10e4)
N	12.00	12	12	12	12	12	12	12
df	5	4	4	4	4	4	4	4
RMSE	0.09	0.10	0.11	0.10	0.10	0.10	0.09	0.09
R2	0.823	0.847	0.823	0.843	0.834	0.830	0.858	0.858
adj R2	0.611	0.579	0.514	0.567	0.543	0.533	0.611	0.608

Table A.50: Rwanda; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.13	0.02	0.51	0.10	0.73	-0.02	-0.31	0.19	0.18	-0.38	-0.36	-0.03	-0.54
GDP PC	0.13	1	-0.57	0.39	0.89	0.37	-0.19	0.62	0.93	0.62	0.46	0.42	-0.21	-0.07
PCOE	0.02	-0.57	1	0.17	-0.46	0.10	-0.39	-0.39	-0.66	-0.02	-0.60	-0.61	-0.16	0.15
CPI	0.51	0.39	0.17	1	0.31	0.36	-0.08	-0.02	0.18	0.44	-0.12	-0.24	-0.13	-0.62
ER	0.10	0.89	-0.46	0.31	1	0.41	-0.19	0.81	0.85	0.81	0.29	0.34	-0.44	0.16
VOL	0.73	0.37	0.10	0.36	0.41	1	-0.41	0.05	0.46	0.53	-0.31	-0.24	-0.13	-0.05
N. IMP	-0.02	-0.19	-0.39	-0.08	-0.19	-0.41	1	-0.02	-0.10	-0.54	0.18	0.29	0.03	-0.21
WGI v1	-0.31	0.62	-0.39	-0.02	0.81	0.05	-0.02	1	0.57	0.54	0.24	0.28	-0.63	0.46
WGI v2	0.19	0.93	-0.66	0.18	0.85	0.46	-0.10	0.57	1	0.57	0.53	0.57	-0.10	0.05
WGI v3	0.18	0.62	-0.02	0.44	0.81	0.53	-0.54	0.54	0.57	1	0.02	0.04	-0.34	0.12
WGI v4	-0.38	0.46	-0.60	-0.12	0.29	-0.31	0.18	0.24	0.53	0.02	1	0.93	0.45	-0.07
WGI v5	-0.36	0.42	-0.61	-0.24	0.34	-0.24	0.29	0.28	0.57	0.04	0.93	1	0.37	0.13
WGI v6	-0.03	-0.21	-0.16	-0.13	-0.44	-0.13	0.03	-0.63	-0.10	-0.34	0.45	0.37	1	-0.38
HER	-0.54	-0.07	0.15	-0.62	0.16	-0.05	-0.21	0.46	0.05	0.12	-0.07	0.13	-0.38	1

Table A.51: Rwanda; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.02*** x10e7 (0.35 x10e5)	-0.02*** x10e7 (0.58 x10e5)	-0.02*** x10e7 (0.47 x10e5)	-0.02*** x10e7 (0.46 x10e5)	-0.02*** x10e7 (0.44 x10e5)	-0.02*** x10e7 (0.45 x10e5)	-0.02*** x10e7 (0.38 x10e5)	-0.03*** x10e7 (0.75 x10e5)
GDP PC	-0.010 x10e3 (0.13 x10e2)	-0.080 x10e2 (0.15 x10e2)	-0.010 x10e3 (0.15 x10e2)	-0.070 x10e2 (0.19 x10e2)	-0.090 x10e2 (0.18 x10e2)	-0.020 x10e3 (0.2 x10e2)	-0.010 x10e3 (0.18 x10e2)	-0.030 x10e3 (0.14 x10e2)
PCOE	0.25*** x10e6 (0.58 x10e5)	0.25*** x10e6 (0.6 x10e5)	0.25*** x10e6 (0.61 x10e5)	0.24*** x10e6 (0.71 x10e5)	0.25*** x10e6 (0.61 x10e5)	0.26*** x10e6 (0.65 x10e5)	0.25*** x10e6 (0.61 x10e5)	0.22*** x10e6 (0.53 x10e5)
CPI	0.28*** x10e4 (0.86 x10e3)	0.29*** x10e4 (0.9 x10e3)	0.29*** x10e4 (0.9 x10e3)	0.28*** x10e4 (0.95 x10e3)	0.29*** x10e4 (0.92 x10e3)	0.27*** x10e4 (0.96 x10e3)	0.28*** x10e4 (0.1 x10e4)	0.19* x10e4 (0.92 x10e3)
ER	-0.03*** x10e5 (0.74 x10e3)	-0.03*** x10e5 (0.11 x10e4)	-0.03*** x10e5 (0.81 x10e3)	-0.03*** x10e5 (0.82 x10e3)	-0.03*** x10e5 (0.79 x10e3)	-0.03*** x10e5 (0.81 x10e3)	-0.03*** x10e5 (0.97 x10e3)	-0.02* x10e5 (0.82 x10e3)
VOL	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)	0*** x10e2 (0 x10)
N. IMP	0.49*** x10e5 (0.43 x10e4)	0.49*** x10e5 (0.48 x10e4)	0.49*** x10e5 (0.46 x10e4)	0.5*** x10e5 (0.47 x10e4)	0.49*** x10e5 (0.47 x10e4)	0.49*** x10e5 (0.46 x10e4)	0.49*** x10e5 (0.47 x10e4)	0.46*** x10e5 (0.42 x10e4)
WGI v 1		-0.040 x10e4 (0.82 x10e3)						
WGI v 2			0.430 x10e3 (0.82 x10e3)					
WGI v 3				-0.020 x10e4 (0.79 x10e3)				
WGI v 4					-0.020 x10e4 (0.12 x10e4)			
WGI v 5						0.310 x10e3 (0.76 x10e3)		
WGI v 6							0.610 x10e2 (0.61 x10e3)	
HER								0.31* x10e4 (0.16 x10e4)
N	17.00	17	17	17	17	17	17	17
df	10	9	9	9	9	9	9	9
RMSE	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.07
R2	0.948	0.949	0.950	0.949	0.948	0.949	0.948	0.963
adj R2	0.917	0.910	0.910	0.909	0.908	0.909	0.908	0.935

Table A.52: Zambia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.21	0.15	-0.09	-0.01	-0.27	0.81	-0.20	0.30	0.21	0.02	0.40	0.29	0.45
GDP PC	0.21	1	0.75	-0.80	-0.08	0.44	0.40	0.45	0.65	0.81	0.83	0.57	0.58	0.63
PCOE	0.15	0.75	1	-0.66	0.38	0.25	0.15	0.07	0.27	0.43	0.58	0.10	0.13	0.28
CPI	-0.09	-0.80	-0.66	1	0.12	-0.31	-0.31	-0.37	-0.54	-0.70	-0.62	-0.34	-0.32	-0.34
ER	-0.01	-0.08	0.38	0.12	1	-0.32	-0.12	-0.72	-0.41	-0.15	-0.19	-0.37	-0.58	-0.46
VOL	-0.27	0.44	0.25	-0.31	-0.32	1	0.17	0.76	0.32	0.37	0.50	0.07	0.40	0.39
N. IMP	0.81	0.40	0.15	-0.31	-0.12	0.17	1	0.11	0.45	0.51	0.22	0.46	0.43	0.48
WGI v1	-0.20	0.45	0.07	-0.37	-0.72	0.76	0.11	1	0.54	0.45	0.62	0.38	0.69	0.56
WGI v2	0.30	0.65	0.27	-0.54	-0.41	0.32	0.45	0.54	1	0.78	0.70	0.68	0.86	0.76
WGI v3	0.21	0.81	0.43	-0.70	-0.15	0.37	0.51	0.45	0.78	1	0.76	0.72	0.70	0.59
WGI v4	0.02	0.83	0.58	-0.62	-0.19	0.50	0.22	0.62	0.70	0.76	1	0.67	0.64	0.58
WGI v5	0.40	0.57	0.10	-0.34	-0.37	0.07	0.46	0.38	0.68	0.72	0.67	1	0.75	0.72
WGI v6	0.29	0.58	0.13	-0.32	-0.58	0.40	0.43	0.69	0.86	0.70	0.64	0.75	1	0.88
HER	0.45	0.63	0.28	-0.34	-0.46	0.39	0.48	0.56	0.76	0.59	0.58	0.72	0.88	1

Table A.53: Zambia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.230 x10e6 (0.23 x10e6)	0.380 x10e6 (0.26 x10e6)	0.40 x10e6 (0.27 x10e6)	0.350 x10e6 (0.36 x10e6)	0.420 x10e6 (0.32 x10e6)	0.420 x10e6 (0.27 x10e6)	0.220 x10e6 (0.25 x10e6)	0.170 x10e6 (0.3 x10e6)
GDP PC	-0.010 x10e3 (0.18 x10e2)	-0.030 x10e3 (0.2 x10e2)	-0.030 x10e3 (0.21 x10e2)	-0.020 x10e3 (0.27 x10e2)	-0.030 x10e3 (0.24 x10e2)	-0.020 x10e3 (0.18 x10e2)	-0.010 x10e3 (0.19 x10e2)	-0.010 x10e3 (0.19 x10e2)
PCOE	-0.080 x10e7 (0.75 x10e6)	-0.10 x10e7 (0.74 x10e6)	-0.010 x10e8 (0.83 x10e6)	-0.010 x10e8 (0.9 x10e6)	-0.010 x10e8 (0.82 x10e6)	-0.010 x10e8 (0.82 x10e6)	-0.080 x10e7 (0.79 x10e6)	-0.090 x10e7 (0.79 x10e6)
CPI	-0.060 x10e5 (0.55 x10e4)	-0.050 x10e5 (0.54 x10e4)	-0.040 x10e5 (0.56 x10e4)	-0.050 x10e5 (0.66 x10e4)	-0.040 x10e5 (0.63 x10e4)	-0.050 x10e5 (0.55 x10e4)	-0.060 x10e5 (0.57 x10e4)	-0.070 x10e5 (0.58 x10e4)
ER	-0.010 x10e6 (0.3 x10e5)	-0.050 x10e6 (0.41 x10e5)	-0.050 x10e6 (0.44 x10e5)	-0.030 x10e6 (0.51 x10e5)	-0.040 x10e6 (0.46 x10e5)	-0.030 x10e6 (0.32 x10e5)	-0.010 x10e6 (0.33 x10e5)	-0.010 x10e6 (0.32 x10e5)
VOL	0.03*** x10 (0 x10)	0.03*** x10 (0 x10)	0.03*** x10 (0 x10)	0.03*** x10 (0.01 x10)	0.03*** x10 (0.01 x10)	0.03*** x10 (0 x10)	0.03*** x10 (0 x10)	0.03*** x10 (0 x10)
N. IMP	0.140 x10e5 (0.89 x10e4)	0.10 x10e5 (0.93 x10e4)	0.850 x10e4 (0.99 x10e4)	0.130 x10e5 (0.95 x10e4)	0.130 x10e5 (0.91 x10e4)	0.130 x10e5 (0.87 x10e4)	0.140 x10e5 (0.93 x10e4)	0.160 x10e5 (0.1 x10e5)
WGI v 1		-0.090 x10e4 (0.71 x10e3)						
WGI v 2			0.530 x10e3 (0.43 x10e3)					
WGI v 3				-0.060 x10e4 (0.13 x10e4)				
WGI v 4					-0.010 x10e5 (0.14 x10e4)			
WGI v 5						-0.010 x10e5 (0.11 x10e4)		
WGI v 6							0.880 x10e2 (0.93 x10e3)	
HER								0.10 x10e4 (0.34 x10e4)
N	18.00	18	18	18	18	18	18	18
df	11	10	10	10	10	10	10	10
RMSE	0.14	0.14	0.14	0.15	0.14	0.14	0.15	0.15
R2	0.816	0.841	0.840	0.820	0.830	0.841	0.817	0.818
adj R2	0.716	0.729	0.728	0.694	0.710	0.730	0.688	0.691

Table A.54: Tunisia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.16	-0.07	-0.02	-0.14	0.81	0.12	0.02	-0.15	0.14	0.16	0.21	-0.07	0.15
GDP PC	0.16	1	-0.84	0.73	0.26	0.16	0.25	-0.65	0.33	-0.57	-0.53	0.69	-0.03	-0.40
PCOE	-0.07	-0.84	1	-0.72	-0.70	0.07	-0.33	0.90	-0.63	0.80	0.79	-0.68	0.12	0.60
CPI	-0.02	0.73	-0.72	1	0.46	0.05	0.22	-0.65	0.40	-0.51	-0.49	0.59	-0.14	-0.33
ER	-0.14	0.26	-0.70	0.46	1	-0.28	0.10	-0.84	0.82	-0.81	-0.83	0.26	-0.26	-0.47
VOL	0.81	0.16	0.07	0.05	-0.28	1	-0.20	0.20	-0.38	0.29	0.34	0.27	-0.11	0.38
N. IMP	0.12	0.25	-0.33	0.22	0.10	-0.20	1	-0.30	0.30	-0.20	-0.19	0.19	0.04	-0.56
WGI v1	0.02	-0.65	0.90	-0.65	-0.84	0.20	-0.30	1	-0.89	0.94	0.94	-0.41	0.09	0.56
WGI v2	-0.15	0.33	-0.63	0.40	0.82	-0.38	0.30	-0.89	1	-0.92	-0.92	0.07	-0.12	-0.46
WGI v3	0.14	-0.57	0.80	-0.51	-0.81	0.29	-0.20	0.94	-0.92	1	0.95	-0.23	0.22	0.48
WGI v4	0.16	-0.53	0.79	-0.49	-0.83	0.34	-0.19	0.94	-0.92	0.95	1	-0.31	0.05	0.52
WGI v5	0.21	0.69	-0.68	0.59	0.26	0.27	0.19	-0.41	0.07	-0.23	-0.31	1	0.02	-0.46
WGI v6	-0.07	-0.03	0.12	-0.14	-0.26	-0.11	0.04	0.09	-0.12	0.22	0.05	0.02	1	-0.06
HER	0.15	-0.40	0.60	-0.33	-0.47	0.38	-0.56	0.56	-0.46	0.48	0.52	-0.46	-0.06	1

Table A.55: Tunisia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.270 x10e5 (0.48 x10e5)	0.460 x10e5 (0.59 x10e5)	0.550 x10e5 (0.59 x10e5)	-0.020 x10e6 (0.67 x10e5)	0.460 x10e5 (0.11 x10e6)	0.370 x10e5 (0.56 x10e5)	0.510 x10e5 (0.49 x10e5)	0.160 x10e6 (0.14 x10e6)
GDP PC	0.450 x10 (0.19 x10e2)	0.070 x10 (0.21 x10e2)	0.110 x10e2 (0.21 x10e2)	0.120 x10e2 (0.2 x10e2)	0.480 x10 (0.2 x10e2)	0.530 x10 (0.2 x10e2)	0.910 x10 (0.19 x10e2)	0.370 x10 (0.19 x10e2)
PCOE	-0.010 x10e7 (0.12 x10e6)	-0.010 x10e7 (0.14 x10e6)	-0.010 x10e7 (0.12 x10e6)	-0.070 x10e6 (0.12 x10e6)	-0.010 x10e7 (0.13 x10e6)	-0.010 x10e7 (0.12 x10e6)	-0.10 x10e6 (0.11 x10e6)	-0.010 x10e7 (0.12 x10e6)
CPI	0.460 x10e3 (0.46 x10e3)	0.470 x10e3 (0.48 x10e3)	0.680 x10e3 (0.53 x10e3)	0.680 x10e3 (0.5 x10e3)	0.450 x10e3 (0.49 x10e3)	0.560 x10e3 (0.54 x10e3)	0.750 x10e3 (0.49 x10e3)	0.550 x10e3 (0.47 x10e3)
ER	-0.010 x10e2 (0.42 x10)	0.080 x10 (0.51 x10)	-0.010 x10e2 (0.42 x10)	0.120 x10 (0.46 x10)	-0.020 x10e2 (0.68 x10)	-0.010 x10e2 (0.44 x10)	-0.050 x10e2 (0.5 x10)	-0.050 x10e2 (0.55 x10)
VOL	00 x10e2 (0 x10)	00 x10e2 (0 x10)	00 x10e2 (0 x10)	00 x10e2 (0 x10)	00 x10e2 (0 x10)	00 x10e2 (0 x10)	00 x10 (0 x10)	00 x10e2 (0 x10)
N. IMP	0.210 x10e4 (0.66 x10e4)	0.420 x10e3 (0.74 x10e4)	0.190 x10e4 (0.67 x10e4)	0.430 x10e4 (0.69 x10e4)	0.180 x10e4 (0.71 x10e4)	0.250 x10e4 (0.7 x10e4)	0.150 x10e4 (0.64 x10e4)	-0.050 x10e3 (0.69 x10e4)
WGI v 1		-0.050 x10e4 (0.76 x10e3)						
WGI v 2			-0.10 x10e4 (0.12 x10e4)					
WGI v 3				0.810 x10e3 (0.77 x10e3)				
WGI v 4					-0.040 x10e4 (0.19 x10e4)			
WGI v 5						-0.020 x10e4 (0.62 x10e3)		
WGI v 6							-0.010 x10e5 (0.93 x10e3)	
HER								-0.020 x10e5 (0.19 x10e4)
N	16.00	16	16	16	16	16	16	16
df	9	8	8	8	8	8	8	8
RMSE	0.07	0.08	0.07	0.07	0.08	0.08	0.07	0.07
R2	0.655	0.670	0.683	0.697	0.656	0.661	0.719	0.695
adj R2	0.424	0.381	0.406	0.432	0.356	0.365	0.474	0.428

Table A.56: Uganda; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.73	-0.74	0.36	0.38	-0.56	0.58	0.43	0.33	-0.43	-0.54	0.51	-0.43	-0.30
GDP PC	0.73	1	-0.84	0.25	0.60	-0.71	0.62	0.62	0.48	-0.72	-0.68	0.61	-0.47	-0.34
PCOE	-0.74	-0.84	1	-0.18	-0.53	0.50	-0.73	-0.63	-0.54	0.57	0.67	-0.65	0.40	0.27
CPI	0.36	0.25	-0.18	1	-0.10	-0.10	-0.10	0.07	0.53	-0.31	-0.02	0.45	0.32	0.29
ER	0.38	0.60	-0.53	-0.10	1	-0.56	0.40	0.75	0.10	-0.59	-0.86	0.34	-0.74	-0.71
VOL	-0.56	-0.71	0.50	-0.10	-0.56	1	-0.58	-0.61	0.01	0.60	0.60	-0.35	0.67	0.42
N. IMP	0.58	0.62	-0.73	-0.10	0.40	-0.58	1	0.39	0.17	-0.49	-0.56	0.43	-0.50	-0.39
WGI v1	0.43	0.62	-0.63	0.07	0.75	-0.61	0.39	1	0.45	-0.63	-0.83	0.61	-0.45	-0.21
WGI v2	0.33	0.48	-0.54	0.53	0.10	0.01	0.17	0.45	1	-0.51	-0.38	0.82	0.24	0.30
WGI v3	-0.43	-0.72	0.57	-0.31	-0.59	0.60	-0.49	-0.63	-0.51	1	0.80	-0.65	0.36	0.19
WGI v4	-0.54	-0.68	0.67	-0.02	-0.86	0.60	-0.56	-0.83	-0.38	0.80	1	-0.56	0.65	0.49
WGI v5	0.51	0.61	-0.65	0.45	0.34	-0.35	0.43	0.61	0.82	-0.65	-0.56	1	-0.16	-0.05
WGI v6	-0.43	-0.47	0.40	0.32	-0.74	0.67	-0.50	-0.45	0.24	0.36	0.65	-0.16	1	0.90
HER	-0.30	-0.34	0.27	0.29	-0.71	0.42	-0.39	-0.21	0.30	0.19	0.49	-0.05	0.90	1

Table A.57: Uganda; Correlation variable-by-variable

A.3 Top 10 world Exporter

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	0.560 x10e5 (0.2 x10e7)	-0.060 x10e8 (0.49 x10e7)	-0.010 x10e8 (0.31 x10e7)	0.820 x10e6 (0.45 x10e7)	-0.07* x10e8 (0.34 x10e7)	-0.010 x10e8 (0.52 x10e7)	-0.030 x10e8 (0.56 x10e7)	-0.070 x10e7 (0.66 x10e7)
GDP PC	0.17** x10e3 (0.58 x10e2)	0.31** x10e3 (0.12 x10e3)	0.19** x10e3 (0.72 x10e2)	0.16** x10e3 (0.66 x10e2)	0.23*** x10e3 (0.57 x10e2)	0.16** x10e3 (0.63 x10e2)	0.19** x10e3 (0.68 x10e2)	0.16** x10e3 (0.68 x10e2)
PCOE	0.150 x10e6 (0.22 x10e7)	0.430 x10e5 (0.21 x10e7)	-0.030 x10e7 (0.23 x10e7)	0.270 x10e6 (0.24 x10e7)	0.240 x10e7 (0.21 x10e7)	0.130 x10e6 (0.23 x10e7)	-0.040 x10e7 (0.24 x10e7)	0.130 x10e6 (0.23 x10e7)
CPI	0.530 x10e5 (0.7 x10e5)	-0.050 x10e6 (0.1 x10e6)	0.610 x10e5 (0.73 x10e5)	0.550 x10e5 (0.74 x10e5)	0.310 x10e4 (0.63 x10e5)	0.530 x10e5 (0.73 x10e5)	0.220 x10e5 (0.87 x10e5)	0.570 x10e5 (0.82 x10e5)
ER	-0.020 x10e8 (0.45 x10e7)	-0.050 x10e8 (0.49 x10e7)	-0.020 x10e8 (0.46 x10e7)	-0.020 x10e8 (0.54 x10e7)	-0.060 x10e8 (0.41 x10e7)	-0.020 x10e8 (0.47 x10e7)	-0.090 x10e7 (0.5 x10e7)	-0.020 x10e8 (0.47 x10e7)
VOL	0** x10 (0 x10)	0** x10 (0 x10)	0** x10 (0 x10)	0* x10 (0 x10)	0** x10 (0 x10)	0* x10 (0 x10)	0** x10 (0 x10)	0* x10 (0 x10)
N. IMP	-0.020 x10e6 (0.8 x10e5)	0.250 x10e5 (0.86 x10e5)	-0.060 x10e5 (0.87 x10e5)	-0.020 x10e6 (0.85 x10e5)	0.180 x10e4 (0.68 x10e5)	-0.020 x10e6 (0.89 x10e5)	-0.030 x10e6 (0.84 x10e5)	-0.030 x10e6 (0.85 x10e5)
WGI v 1		0.670 x10e5 (0.51 x10e5)						
WGI v 2			0.550 x10e5 (0.84 x10e5)					
WGI v 3				-0.020 x10e6 (0.81 x10e5)				
WGI v 4					0.95** x10e5 (0.4 x10e5)			
WGI v 5						0.20 x10e5 (0.71 x10e5)		
WGI v 6							0.40 x10e5 (0.62 x10e5)	
HER								0.130 x10e5 (0.11 x10e6)
N	18.00	18	18	18	18	18	18	18
df	11	10	10	10	10	10	10	10
RMSE	5.57	5.38	5.72	5.83	4.68	5.82	5.72	5.84
R2	0.854	0.876	0.860	0.854	0.906	0.855	0.860	0.854
adj R2	0.774	0.789	0.762	0.752	0.841	0.753	0.762	0.752

Table A.58: Oman; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.86	-0.62	0.53	0.67	0.42	-0.40	-0.65	-0.79	-0.35	0.48	0.24	-0.72	0.33
GDP PC	0.86	1	-0.57	0.64	0.82	0.11	-0.28	-0.77	-0.86	-0.17	0.25	0.38	-0.72	0.54
PCOE	-0.62	-0.57	1	-0.05	-0.25	-0.46	0.72	0.65	0.60	0.66	-0.44	-0.24	0.78	-0.14
CPI	0.53	0.64	-0.05	1	0.75	-0.13	0.19	-0.11	-0.57	0.31	0.27	0.17	-0.14	0.23
ER	0.67	0.82	-0.25	0.75	1	0.05	0.02	-0.42	-0.73	0.21	0.34	0.17	-0.53	0.47
VOL	0.42	0.11	-0.46	-0.13	0.05	1	-0.45	-0.26	-0.35	-0.56	0.31	-0.32	-0.53	-0.29
N. IMP	-0.40	-0.28	0.72	0.19	0.02	-0.45	1	0.38	0.25	0.66	-0.30	-0.28	0.59	0.04
WGI v1	-0.65	-0.77	0.65	-0.11	-0.42	-0.26	0.38	1	0.72	0.48	0.05	-0.11	0.80	-0.46
WGI v2	-0.79	-0.86	0.60	-0.57	-0.73	-0.35	0.25	0.72	1	0.27	-0.23	-0.03	0.74	-0.25
WGI v3	-0.35	-0.17	0.66	0.31	0.21	-0.56	0.66	0.48	0.27	1	0.00	0.20	0.64	0.08
WGI v4	0.48	0.25	-0.44	0.27	0.34	0.31	-0.30	0.05	-0.23	0.00	1	0.24	-0.17	-0.02
WGI v5	0.24	0.38	-0.24	0.17	0.17	-0.32	-0.28	-0.11	-0.03	0.20	0.24	1	0.01	0.29
WGI v6	-0.72	-0.72	0.78	-0.14	-0.53	-0.53	0.59	0.80	0.74	0.64	-0.17	0.01	1	-0.29
HER	0.33	0.54	-0.14	0.23	0.47	-0.29	0.04	-0.46	-0.25	0.08	-0.02	0.29	-0.29	1

Table A.59: Oman; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.04*** x10e9 (0.85 x10e7)	-0.06*** x10e9 (0.13 x10e8)	-0.04*** x10e9 (0.87 x10e7)	-0.03** x10e9 (0.12 x10e8)	-0.04*** x10e9 (0.11 x10e8)	-0.03*** x10e9 (0.11 x10e8)	-0.04*** x10e9 (0.87 x10e7)	-0.040 x10e8 (0.19 x10e8)
GDP PC	0.28** x10e4 (0.1 x10e4)	0.140 x10e4 (0.12 x10e4)	0.26* x10e4 (0.15 x10e4)	0.29** x10e4 (0.1 x10e4)	0.26** x10e4 (0.12 x10e4)	0.28** x10e4 (0.11 x10e4)	0.26** x10e4 (0.11 x10e4)	0.37*** x10e4 (0.11 x10e4)
PCOE	0.40 x10e8 (0.31 x10e8)	0.450 x10e8 (0.29 x10e8)	0.410 x10e8 (0.33 x10e8)	0.410 x10e8 (0.31 x10e8)	0.420 x10e8 (0.33 x10e8)	0.40 x10e8 (0.32 x10e8)	0.440 x10e8 (0.32 x10e8)	0.170 x10e8 (0.31 x10e8)
CPI	0.33* x10e6 (0.18 x10e6)	0.31* x10e6 (0.16 x10e6)	0.33* x10e6 (0.19 x10e6)	0.250 x10e6 (0.19 x10e6)	0.35* x10e6 (0.19 x10e6)	0.330 x10e6 (0.2 x10e6)	0.36* x10e6 (0.19 x10e6)	0.230 x10e6 (0.18 x10e6)
ER	0.1** x10e4 (0.41 x10e3)	0.99** x10e3 (0.37 x10e3)	0.1** x10e4 (0.42 x10e3)	0.1** x10e4 (0.4 x10e3)	0.11** x10e4 (0.42 x10e3)	0.1** x10e4 (0.42 x10e3)	0.96** x10e3 (0.43 x10e3)	0.670 x10e3 (0.43 x10e3)
VOL	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)
N. IMP	-0.01** x10e8 (0.49 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.01** x10e8 (0.53 x10e6)	-0.01** x10e8 (0.49 x10e6)	-0.01** x10e8 (0.55 x10e6)	-0.01** x10e8 (0.51 x10e6)	-0.01** x10e8 (0.5 x10e6)	-0.09* x10e7 (0.5 x10e6)
WGI v 1		0.51* x10e6 (0.25 x10e6)						
WGI v 2			0.210 x10e5 (0.14 x10e6)					
WGI v 3				-0.010 x10e7 (0.1 x10e6)				
WGI v 4					0.30 x10e5 (0.94 x10e5)			
WGI v 5						-0.010 x10e6 (0.16 x10e6)		
WGI v 6							0.590 x10e5 (0.85 x10e5)	
HER								-0.04* x10e7 (0.2 x10e6)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	18.21	16.66	18.79	17.95	18.74	18.80	18.52	16.94
R2	0.822	0.860	0.822	0.837	0.823	0.822	0.827	0.855
adj R2	0.755	0.795	0.739	0.761	0.740	0.738	0.746	0.788

Table A.60: Indonesia; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.10	0.55	0.16	-0.09	0.33	-0.31	0.10	0.08	-0.29	-0.08	-0.14	-0.10	-0.41
GDP PC	0.10	1	0.59	-0.72	0.86	-0.81	0.62	0.93	0.95	0.81	0.89	0.89	0.82	0.80
PCOE	0.55	0.59	1	-0.27	0.32	-0.26	0.06	0.50	0.50	0.33	0.42	0.40	0.28	0.17
CPI	0.16	-0.72	-0.27	1	-0.59	0.58	-0.53	-0.65	-0.65	-0.70	-0.70	-0.73	-0.67	-0.73
ER	-0.09	0.86	0.32	-0.59	1	-0.91	0.62	0.85	0.86	0.81	0.83	0.87	0.85	0.74
VOL	0.33	-0.81	-0.26	0.58	-0.91	1	-0.57	-0.82	-0.81	-0.88	-0.86	-0.88	-0.81	-0.83
N. IMP	-0.31	0.62	0.06	-0.53	0.62	-0.57	1	0.58	0.57	0.54	0.49	0.57	0.61	0.72
WGI v1	0.10	0.93	0.50	-0.65	0.85	-0.82	0.58	1	0.94	0.74	0.90	0.88	0.85	0.72
WGI v2	0.08	0.95	0.50	-0.65	0.86	-0.81	0.57	0.94	1	0.74	0.88	0.88	0.80	0.71
WGI v3	-0.29	0.81	0.33	-0.70	0.81	-0.88	0.54	0.74	0.74	1	0.90	0.86	0.78	0.89
WGI v4	-0.08	0.89	0.42	-0.70	0.83	-0.86	0.49	0.90	0.88	0.90	1	0.93	0.88	0.80
WGI v5	-0.14	0.89	0.40	-0.73	0.87	-0.88	0.57	0.88	0.88	0.86	0.93	1	0.87	0.81
WGI v6	-0.10	0.82	0.28	-0.67	0.85	-0.81	0.61	0.85	0.80	0.78	0.88	0.87	1	0.74
HER	-0.41	0.80	0.17	-0.73	0.74	-0.83	0.72	0.72	0.71	0.89	0.80	0.81	0.74	1

Table A.61: Indonesia; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intecept)	-0.030 x10e7 (0.2 x10e7)	-0.050 x10e8 (0.47 x10e7)	-0.07*** x10e8 (0.18 x10e7)	0.64* x10e7 (0.37 x10e7)	-0.080 x10e8 (0.54 x10e7)	-0.070 x10e8 (0.42 x10e7)	-0.050 x10e8 (0.31 x10e7)	-0.050 x10e8 (0.85 x10e7)
GDP PC	0.16*** x10e3 (0.2 x10e2)	0.17*** x10e3 (0.22 x10e2)	0.13*** x10e3 (0.13 x10e2)	0.16*** x10e3 (0.18 x10e2)	0.14*** x10e3 (0.26 x10e2)	0.14*** x10e3 (0.24 x10e2)	0.14*** x10e3 (0.21 x10e2)	0.16*** x10e3 (0.21 x10e2)
PCOE	0.10 x10e7 (0.29 x10e7)	-0.010 x10e7 (0.31 x10e7)	0.130 x10e7 (0.17 x10e7)	-0.060 x10e7 (0.27 x10e7)	0.320 x10e7 (0.31 x10e7)	0.460 x10e7 (0.34 x10e7)	0.450 x10e7 (0.32 x10e7)	0.870 x10e6 (0.29 x10e7)
CPI	-0.010 x10e7 (0.14 x10e6)	-0.020 x10e7 (0.16 x10e6)	-0.090 x10e6 (0.86 x10e5)	-0.070 x10e6 (0.13 x10e6)	-0.060 x10e6 (0.14 x10e6)	-0.090 x10e6 (0.13 x10e6)	-0.010 x10e7 (0.13 x10e6)	-0.090 x10e6 (0.16 x10e6)
ER	-0.010 x10e8 (0.89 x10e6)	-0.020 x10e8 (0.93 x10e6)	0.190 x10e6 (0.62 x10e6)	-0.02** x10e8 (0.84 x10e6)	-0.010 x10e8 (0.86 x10e6)	-0.10 x10e7 (0.88 x10e6)	-0.01* x10e8 (0.82 x10e6)	-0.010 x10e8 (0.92 x10e6)
VOL	00 x10 (0 x10)	00 x10 (0 x10)	0** x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)	00 x10 (0 x10)
N. IMP	-0.030 x10e6 (0.11 x10e6)	-0.10 x10e6 (0.13 x10e6)	0.15* x10e6 (0.77 x10e5)	0.10 x10e6 (0.12 x10e6)	0.130 x10e6 (0.15 x10e6)	-0.020 x10e6 (0.11 x10e6)	-0.060 x10e6 (0.1 x10e6)	-0.040 x10e6 (0.12 x10e6)
WGI v 1		0.540 x10e5 (0.54 x10e5)						
WGI v 2			0.13*** x10e6 (0.25 x10e5)					
WGI v 3				-0.07** x10e6 (0.34 x10e5)				
WGI v 4					0.750 x10e5 (0.48 x10e5)			
WGI v 5						0.590 x10e5 (0.34 x10e5)		
WGI v 6							0.52* x10e5 (0.26 x10e5)	
HER								0.680 x10e5 (0.13 x10e6)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	5.90	5.90	3.60	5.34	5.65	5.57	5.42	6.04
R2	0.889	0.896	0.961	0.915	0.905	0.907	0.912	0.891
adj R2	0.848	0.848	0.943	0.875	0.860	0.864	0.871	0.840

Table A.62: Brunei Darussalam; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.92	0.27	0.01	-0.13	0.42	0.13	-0.36	0.50	0.01	0.30	0.34	0.30	0.08
GDP PC	0.92	1	0.28	0.17	0.03	0.38	0.09	-0.32	0.25	0.04	0.29	0.26	0.25	-0.01
PCOE	0.27	0.28	1	-0.39	0.56	0.28	-0.56	-0.16	0.00	-0.68	0.04	-0.68	-0.66	0.30
CPI	0.01	0.17	-0.39	1	0.10	-0.17	0.06	0.33	-0.04	0.21	0.14	0.26	0.41	-0.50
ER	-0.13	0.03	0.56	0.10	1	0.01	-0.66	0.16	-0.28	-0.69	0.17	-0.61	-0.41	0.06
VOL	0.42	0.38	0.28	-0.17	0.01	1	-0.24	-0.74	-0.02	0.00	-0.17	-0.06	-0.13	-0.04
N. IMP	0.13	0.09	-0.56	0.06	-0.66	-0.24	1	0.23	-0.05	0.75	-0.35	-0.57	0.56	0.03
WGI v1	-0.36	-0.32	-0.16	0.33	0.16	-0.74	0.23	1	-0.15	0.09	-0.11	-0.03	0.19	0.00
WGI v2	0.50	0.25	0.00	-0.04	-0.28	-0.02	-0.05	-0.15	1	-0.19	0.55	0.34	0.22	0.11
WGI v3	0.01	0.04	-0.68	0.21	-0.69	0.00	0.75	0.09	-0.19	1	-0.34	0.65	0.59	-0.22
WGI v4	0.30	0.29	0.04	0.14	0.17	-0.17	-0.35	-0.11	0.55	-0.34	1	0.12	0.14	-0.01
WGI v5	0.34	0.26	-0.68	0.26	-0.61	-0.06	0.57	-0.03	0.34	0.65	0.12	1	0.91	-0.26
WGI v6	0.30	0.25	-0.66	0.41	-0.41	-0.13	0.56	0.19	0.22	0.59	0.14	0.91	1	-0.37
HER	0.08	-0.01	0.30	-0.50	0.06	-0.04	0.03	0.00	0.11	-0.22	-0.01	-0.26	-0.37	1

Table A.63: Brunei Darussalam; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	0.760 x10e6 (0.76 x10e6)	0.180 x10e7 (0.21 x10e7)	-0.030 x10e8 (0.44 x10e7)	0.3** x10e7 (0.13 x10e7)	0.32* x10e7 (0.16 x10e7)	0.36* x10e7 (0.2 x10e7)	0.110 x10e7 (0.13 x10e7)	0.260 x10e7 (0.31 x10e7)
GDP PC	0.14*** x10e3 (0.35 x10e2)	0.16*** x10e3 (0.55 x10e2)	0.14*** x10e3 (0.36 x10e2)	0.1** x10e3 (0.38 x10e2)	0.85* x10e2 (0.47 x10e2)	0.12*** x10e3 (0.36 x10e2)	0.13** x10e3 (0.52 x10e2)	0.12** x10e3 (0.45 x10e2)
PCOE	-0.04** x10e8 (0.15 x10e7)	-0.04** x10e8 (0.16 x10e7)	-0.04** x10e8 (0.16 x10e7)	-0.03** x10e8 (0.15 x10e7)	-0.05*** x10e8 (0.15 x10e7)	-0.05*** x10e8 (0.15 x10e7)	-0.04** x10e8 (0.16 x10e7)	-0.05** x10e8 (0.16 x10e7)
CPI	0.440 x10e5 (0.37 x10e5)	0.290 x10e5 (0.46 x10e5)	0.640 x10e5 (0.43 x10e5)	0.8* x10e5 (0.39 x10e5)	0.1* x10e6 (0.5 x10e5)	0.50 x10e5 (0.35 x10e5)	0.530 x10e5 (0.46 x10e5)	0.610 x10e5 (0.48 x10e5)
ER	-0.010 x10e7 (0.14 x10e6)	-0.020 x10e7 (0.19 x10e6)	-0.020 x10e7 (0.15 x10e6)	-0.020 x10e7 (0.13 x10e6)	-0.010 x10e7 (0.13 x10e6)	-0.020 x10e7 (0.15 x10e6)	-0.010 x10e7 (0.15 x10e6)	-0.020 x10e7 (0.14 x10e6)
VOL	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)
N. IMP	-0.06** x10e6 (0.23 x10e5)	-0.06** x10e6 (0.24 x10e5)	-0.05* x10e6 (0.25 x10e5)	-0.040 x10e6 (0.24 x10e5)	-0.07*** x10e6 (0.22 x10e5)	-0.06** x10e6 (0.22 x10e5)	-0.06** x10e6 (0.23 x10e5)	-0.07** x10e6 (0.25 x10e5)
WGI v 1		-0.020 x10e6 (0.27 x10e5)						
WGI v 2			0.610 x10e5 (0.66 x10e5)					
WGI v 3				-0.030 x10e6 (0.18 x10e5)				
WGI v 4					-0.030 x10e6 (0.2 x10e5)			
WGI v 5						-0.030 x10e6 (0.22 x10e5)		
WGI v 6							-0.070 x10e5 (0.21 x10e5)	
HER								-0.020 x10e6 (0.38 x10e5)
N	23.00	23	23	23	23	23	23	23
df	16	15	15	15	15	15	15	15
RMSE	2.99	3.05	3.00	2.75	2.83	2.86	3.07	3.05
R2	0.967	0.968	0.969	0.974	0.972	0.972	0.967	0.968
adj R2	0.955	0.953	0.954	0.962	0.959	0.959	0.952	0.953

Table A.64: Trinidad and Tobago; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.58	-0.46	0.61	0.72	0.93	0.11	-0.39	-0.52	0.00	0.30	-0.43	-0.02	0.22
GDP PC	0.58	1	0.12	0.30	0.77	0.51	0.66	0.29	-0.53	-0.24	-0.44	-0.79	-0.65	-0.55
PCOE	-0.46	0.12	1	-0.50	-0.05	-0.35	0.11	0.40	0.26	-0.19	-0.63	-0.27	-0.36	-0.61
CPI	0.61	0.30	-0.50	1	0.41	0.39	-0.20	-0.53	-0.50	0.17	0.60	-0.09	0.34	0.49
ER	0.72	0.77	-0.05	0.41	1	0.74	0.40	-0.23	-0.40	-0.10	-0.08	-0.74	-0.26	-0.22
VOL	0.93	0.51	-0.35	0.39	0.74	1	0.18	-0.38	-0.49	0.12	0.25	-0.42	-0.03	0.16
N. IMP	0.11	0.66	0.11	-0.20	0.40	0.18	1	0.58	-0.37	-0.08	-0.65	-0.57	-0.71	-0.72
WGI v1	-0.39	0.29	0.40	-0.53	-0.23	-0.38	0.58	1	-0.03	-0.11	-0.74	-0.17	-0.70	-0.65
WGI v2	-0.52	-0.53	0.26	-0.50	-0.40	-0.49	-0.37	-0.03	1	-0.50	-0.18	0.03	0.01	-0.07
WGI v3	0.00	-0.24	-0.19	0.17	-0.10	0.12	-0.08	-0.11	-0.50	1	0.50	0.52	0.47	0.50
WGI v4	0.30	-0.44	-0.63	0.60	-0.08	0.25	-0.65	-0.74	-0.18	0.50	1	0.55	0.85	0.95
WGI v5	-0.43	-0.79	-0.27	-0.09	-0.74	-0.42	-0.57	-0.17	0.03	0.52	0.55	1	0.63	0.62
WGI v6	-0.02	-0.65	-0.36	0.34	-0.26	-0.03	-0.71	-0.70	0.01	0.47	0.85	0.63	1	0.85
HER	0.22	-0.55	-0.61	0.49	-0.22	0.16	-0.72	-0.65	-0.07	0.50	0.95	0.62	0.85	1

Table A.65: Trinidad and Tobago; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.03*** x10e9 (0.72 x10e7)	-0.03** x10e9 (0.11 x10e8)	-0.02** x10e9 (0.95 x10e7)	-0.020 x10e9 (0.16 x10e8)	-0.04** x10e9 (0.15 x10e8)	-0.020 x10e9 (0.15 x10e8)	-0.04* x10e9 (0.2 x10e8)	-0.020 x10e9 (0.17 x10e8)
GDP PC	0.26** x10e3 (0.98 x10e2)	0.27** x10e3 (0.1 x10e3)	0.210 x10e3 (0.12 x10e3)	0.31** x10e3 (0.13 x10e3)	0.20 x10e3 (0.13 x10e3)	0.34* x10e3 (0.17 x10e3)	0.180 x10e3 (0.15 x10e3)	0.3** x10e3 (0.13 x10e3)
PCOE	-0.010 x10e8 (0.1 x10e8)	-0.060 x10e8 (0.13 x10e8)	0.290 x10e7 (0.12 x10e8)	-0.080 x10e8 (0.17 x10e8)	0.460 x10e7 (0.12 x10e8)	-0.090 x10e8 (0.18 x10e8)	0.290 x10e7 (0.12 x10e8)	-0.080 x10e8 (0.18 x10e8)
CPI	-0.03* x10e7 (0.13 x10e6)	-0.030 x10e7 (0.15 x10e6)	-0.03* x10e7 (0.14 x10e6)	-0.03* x10e7 (0.14 x10e6)	-0.03** x10e7 (0.14 x10e6)	-0.03* x10e7 (0.15 x10e6)	-0.03* x10e7 (0.14 x10e6)	-0.03* x10e7 (0.14 x10e6)
ER	0.38** x10e7 (0.15 x10e7)	0.39** x10e7 (0.15 x10e7)	0.38** x10e7 (0.15 x10e7)	0.41** x10e7 (0.16 x10e7)	0.43** x10e7 (0.17 x10e7)	0.38** x10e7 (0.16 x10e7)	0.310 x10e7 (0.18 x10e7)	0.4** x10e7 (0.16 x10e7)
VOL	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)	0*** x10 (0 x10)
N. IMP	0.580 x10e5 (0.31 x10e6)	0.150 x10e6 (0.35 x10e6)	-0.030 x10e6 (0.33 x10e6)	0.610 x10e5 (0.32 x10e6)	-0.090 x10e6 (0.37 x10e6)	0.760 x10e5 (0.32 x10e6)	-0.050 x10e6 (0.35 x10e6)	0.960 x10e5 (0.33 x10e6)
WGI v 1		0.980 x10e5 (0.14 x10e6)						
WGI v 2			-0.020 x10e7 (0.23 x10e6)					
WGI v 3				-0.010 x10e7 (0.19 x10e6)				
WGI v 4					0.120 x10e6 (0.15 x10e6)			
WGI v 5						-0.010 x10e7 (0.2 x10e6)		
WGI v 6							0.240 x10e6 (0.32 x10e6)	
HER								-0.010 x10e7 (0.23 x10e6)
N	18.00	18	18	18	18	18	18	18
df	11	10	10	10	10	10	10	10
RMSE	13.97	14.32	14.23	14.45	14.18	14.44	14.24	14.49
R2	0.926	0.929	0.930	0.928	0.931	0.928	0.930	0.928
adj R2	0.886	0.880	0.881	0.878	0.882	0.878	0.881	0.877

Table A.66: United Arab Emirates; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	-0.03	-0.05	-0.16	0.20	0.89	-0.27	0.17	0.00	0.15	0.06	0.02	0.43	0.03
GDP PC	-0.03	1	0.11	0.52	-0.25	-0.06	0.18	-0.13	-0.40	0.25	0.41	0.26	0.47	0.09
PCOE	-0.05	0.11	1	0.66	0.76	-0.18	-0.29	0.75	0.69	-0.86	-0.77	-0.90	-0.43	-0.93
CPI	-0.16	0.52	0.66	1	0.25	-0.09	-0.05	0.26	0.25	-0.38	-0.20	-0.48	-0.16	-0.58
ER	0.20	-0.25	0.76	0.25	1	-0.04	-0.21	0.64	0.66	-0.69	-0.81	-0.78	-0.25	-0.70
VOL	0.89	-0.06	-0.18	-0.09	-0.04	1	-0.31	0.03	-0.01	0.26	0.17	0.10	0.33	0.10
N. IMP	-0.27	0.18	-0.29	-0.05	-0.21	-0.31	1	-0.55	-0.49	0.32	0.45	0.37	0.39	0.41
WGI v1	0.17	-0.13	0.75	0.26	0.64	0.03	-0.55	1	0.71	-0.70	-0.74	-0.81	-0.48	-0.78
WGI v2	0.00	-0.40	0.69	0.25	0.66	-0.01	-0.49	0.71	1	-0.82	-0.83	-0.80	-0.59	-0.80
WGI v3	0.15	0.25	-0.86	-0.38	-0.69	0.26	0.32	-0.70	-0.82	1	0.88	0.92	0.52	0.84
WGI v4	0.06	0.41	-0.77	-0.20	-0.81	0.17	0.45	-0.74	-0.83	0.88	1	0.90	0.59	0.79
WGI v5	0.02	0.26	-0.90	-0.48	-0.78	0.10	0.37	-0.81	-0.80	0.92	0.90	1	0.58	0.90
WGI v6	0.43	0.47	-0.43	-0.16	-0.25	0.33	0.39	-0.48	-0.59	0.52	0.59	0.58	1	0.53
HER	0.03	0.09	-0.93	-0.58	-0.70	0.10	0.41	-0.78	-0.80	0.84	0.79	0.90	0.53	1

Table A.67: United Arab Emirates; Correlation variable-by-variable

Model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
(Intercept)	-0.040 x10e9 (0.71 x10e8)	-0.040 x10e9 (0.74 x10e8)	-0.030 x10e9 (0.88 x10e8)	-0.050 x10e9 (0.94 x10e8)	-0.010 x10e9 (0.86 x10e8)	0.430 x10e8 (0.71 x10e8)	-0.030 x10e9 (0.58 x10e8)	-0.020 x10e10 (0.15 x10e9)
GDP PC	0.15*** x10e4 (0.19 x10e3)	0.14*** x10e4 (0.22 x10e3)	0.15*** x10e4 (0.2 x10e3)	0.15*** x10e4 (0.23 x10e3)	0.15*** x10e4 (0.2 x10e3)	0.17*** x10e4 (0.18 x10e3)	0.15*** x10e4 (0.16 x10e3)	0.16*** x10e4 (0.2 x10e3)
PCOE	0.160 x10e9 (0.11 x10e9)	0.140 x10e9 (0.13 x10e9)	0.160 x10e9 (0.12 x10e9)	0.160 x10e9 (0.12 x10e9)	0.160 x10e9 (0.12 x10e9)	0.160 x10e9 (0.95 x10e8)	0.24** x10e9 (0.98 x10e8)	0.140 x10e9 (0.11 x10e9)
CPI	-0.09* x10e7 (0.49 x10e6)	-0.070 x10e7 (0.74 x10e6)	-0.1* x10e7 (0.52 x10e6)	-0.090 x10e7 (0.6 x10e6)	-0.01* x10e8 (0.52 x10e6)	-0.01** x10e8 (0.45 x10e6)	-0.02*** x10e8 (0.58 x10e6)	-0.070 x10e7 (0.49 x10e6)
ER	-0.02** x10e9 (0.79 x10e7)	-0.02** x10e9 (0.87 x10e7)	-0.02** x10e9 (0.83 x10e7)	-0.02** x10e9 (0.87 x10e7)	-0.02** x10e9 (0.82 x10e7)	-0.02*** x10e9 (0.67 x10e7)	-0.010 x10e9 (0.8 x10e7)	-0.03*** x10e9 (0.76 x10e7)
VOL	0.030 x10 (0.03 x10)	0.030 x10 (0.03 x10)	0.030 x10 (0.03 x10)	0.030 x10 (0.03 x10)	0.030 x10 (0.03 x10)	0.05* x10 (0.02 x10)	0.020 x10 (0.02 x10)	0.040 x10 (0.03 x10)
N. IMP	-0.010 x10e8 (0.18 x10e7)	-0.010 x10e8 (0.19 x10e7)	-0.020 x10e8 (0.28 x10e7)	-0.010 x10e8 (0.2 x10e7)	-0.080 x10e7 (0.2 x10e7)	-0.010 x10e8 (0.15 x10e7)	0.320 x10e6 (0.16 x10e7)	-0.020 x10e8 (0.18 x10e7)
WGI v 1		0.180 x10e6 (0.45 x10e6)						
WGI v 2			-0.020 x10e7 (0.93 x10e6)					
WGI v 3				0.530 x10e5 (0.11 x10e7)				
WGI v 4					-0.050 x10e7 (0.84 x10e6)			
WGI v 5						-0.02** x10e8 (0.67 x10e6)		
WGI v 6							-0.01** x10e8 (0.55 x10e6)	
HER								0.320 x10e7 (0.23 x10e7)
N	17.00	17	17	17	17	17	17	17
df	10	9	9	9	9	9	9	9
RMSE	75.49	78.86	79.36	79.56	77.77	63.43	62.06	71.99
R2	0.954	0.955	0.955	0.954	0.957	0.971	0.972	0.963
adj R2	0.927	0.921	0.920	0.919	0.923	0.949	0.951	0.934

Table A.68: Qatar; Regression

CORREL	GNL	GDP PC	PCOE	CPI	ER	VOL	N. IMP	WGI v1	WGI v2	WGI v3	WGI v4	WGI v5	WGI v6	HER
GNL	1	0.87	-0.38	-0.32	0.10	0.72	0.66	0.07	-0.57	0.79	0.68	0.73	0.32	-0.17
GDP PC	0.87	1	-0.22	-0.05	0.52	0.49	0.52	0.23	-0.49	0.74	0.61	0.67	0.48	-0.35
PCOE	-0.38	-0.22	1	0.68	0.32	-0.79	-0.82	0.48	0.71	-0.56	-0.71	-0.65	-0.29	-0.17
CPI	-0.32	-0.05	0.68	1	0.35	-0.57	-0.52	0.01	0.38	-0.53	-0.52	-0.56	-0.48	-0.33
ER	0.10	0.52	0.32	0.35	1	-0.27	-0.15	0.57	0.05	0.18	0.02	0.03	0.46	-0.23
VOL	0.72	0.49	-0.79	-0.57	-0.27	1	0.95	-0.41	-0.83	0.75	0.84	0.83	0.33	0.05
N. IMP	0.66	0.52	-0.82	-0.52	-0.15	0.95	1	-0.41	-0.92	0.72	0.87	0.81	0.42	0.10
WGI v1	0.07	0.23	0.48	0.01	0.57	-0.41	-0.41	1	0.40	0.14	-0.05	-0.08	0.39	0.14
WGI v2	-0.57	-0.49	0.71	0.38	0.05	-0.83	-0.92	0.40	1	-0.61	-0.77	-0.72	-0.40	-0.12
WGI v3	0.79	0.74	-0.56	-0.53	0.18	0.75	0.72	0.14	-0.61	1	0.83	0.88	0.69	0.02
WGI v4	0.68	0.61	-0.71	-0.52	0.02	0.84	0.87	-0.05	-0.77	0.83	1	0.88	0.58	0.19
WGI v5	0.73	0.67	-0.65	-0.56	0.03	0.83	0.81	-0.08	-0.72	0.88	0.88	1	0.65	-0.13
WGI v6	0.32	0.48	-0.29	-0.48	0.46	0.33	0.42	0.39	-0.40	0.69	0.58	0.65	1	0.16
HER	-0.17	-0.35	-0.17	-0.33	-0.23	0.05	0.10	0.14	-0.12	0.02	0.19	-0.13	0.16	1

Table A.69: Qatar; Correlation variable-by-variable