

OUR CURRENCY, YOUR PROBLEM

APPLIED COMPUTATIONAL STATISTICS



PROBLEM STATEMENT

WHAT DOES A **STRONG DOLLAR** MEAN
FOR THE PHILIPPINE ECONOMY AND
ORDINARY FILIPINOS?

OBJECTIVES

**EXPLORE THE
SUPPOSED STRENGTH
OF USD**

What are the possible causes of this strength?
Are they structural in nature?

**UNDERSTAND THE FX
MOVEMENT IN THE
CONTEXT OF
PHILIPPINE ECONOMIC
SETTING**

METHODOLOGY

**DATA
COLLECTION**

**INITIAL
ANALYSIS**

**STATISTICAL TESTS
AND ANALYSIS**

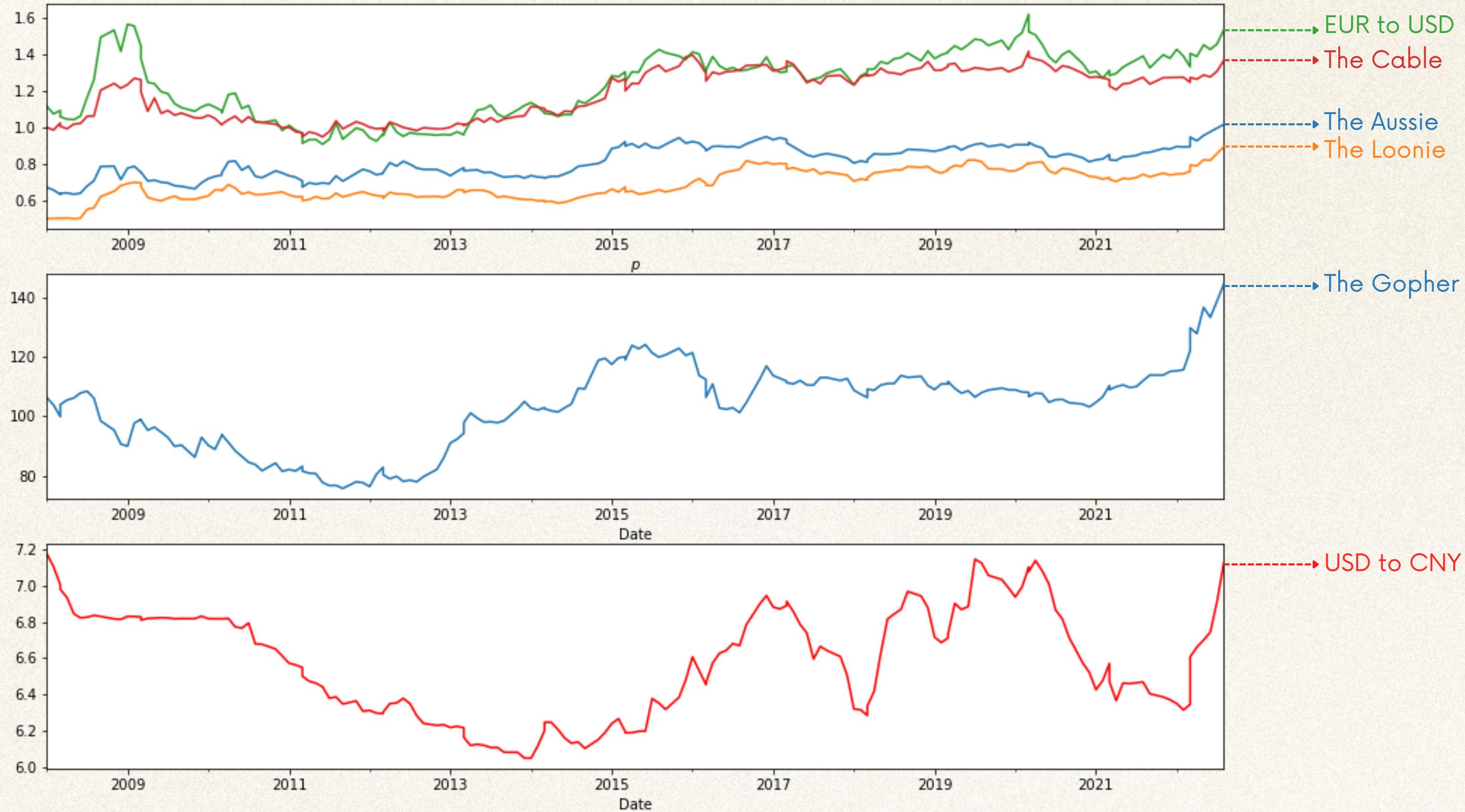
**INTERPRETATION
AND CONCLUSION**

LIMITATIONS: No derivative dynamics involved, bid-ask spreads are omitted, 2022 data ends October 1st

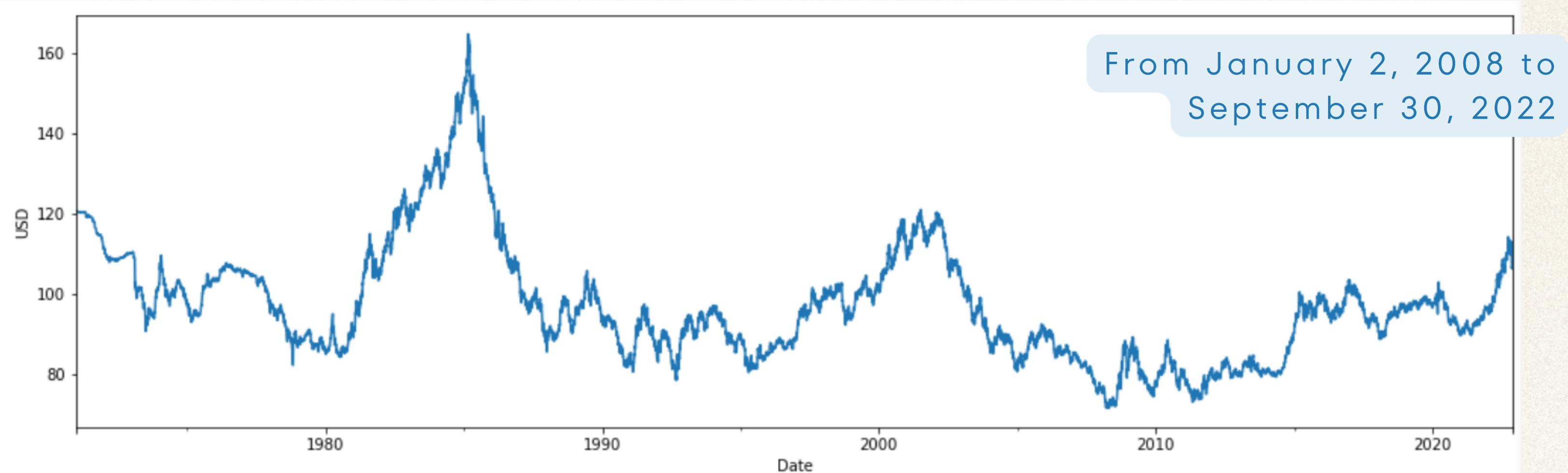
FINDINGS & INSIGHTS

FX MOVEMENT

USD GAINS VS G10 CURRENCIES



THE US DOLLAR

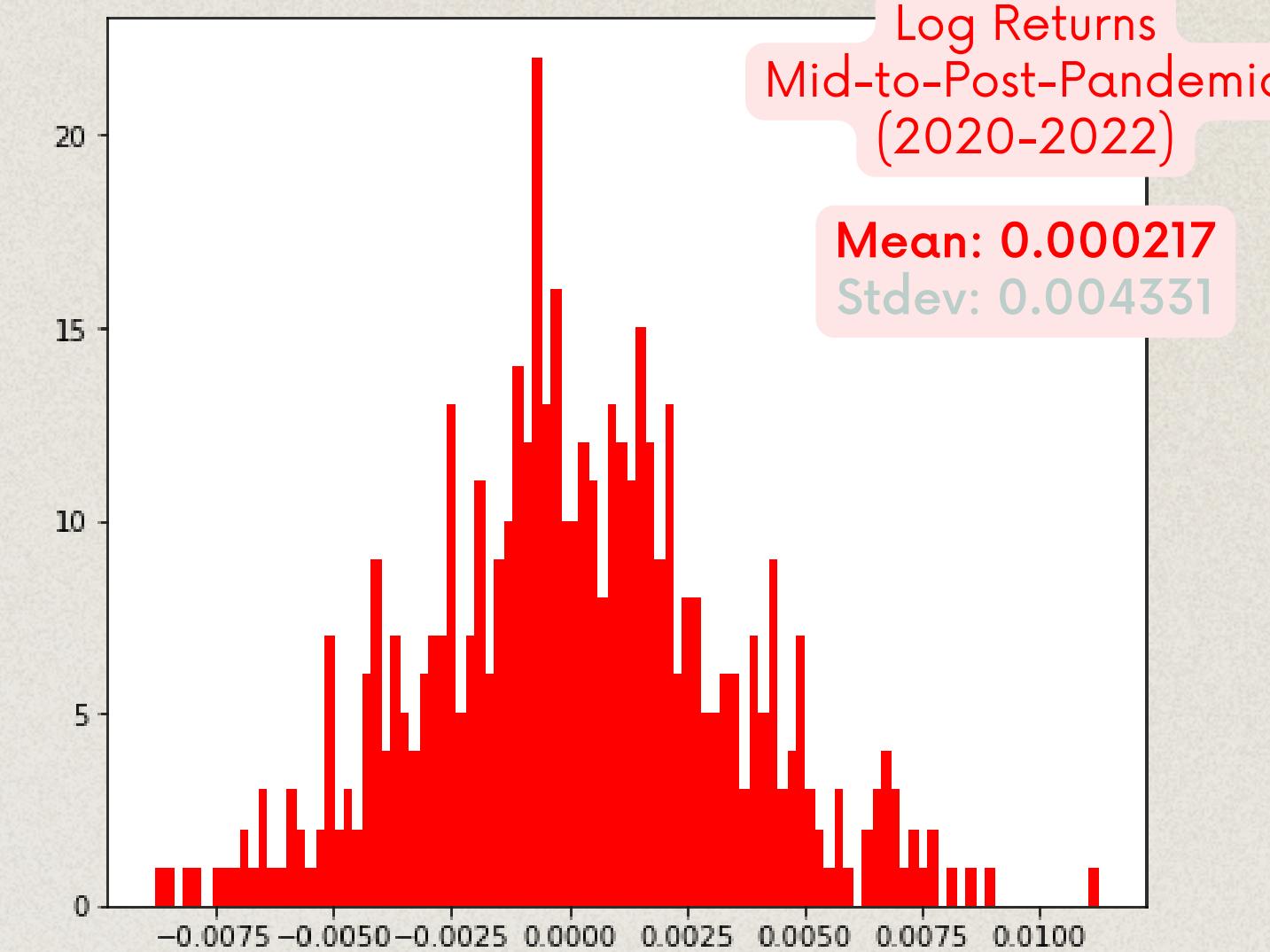
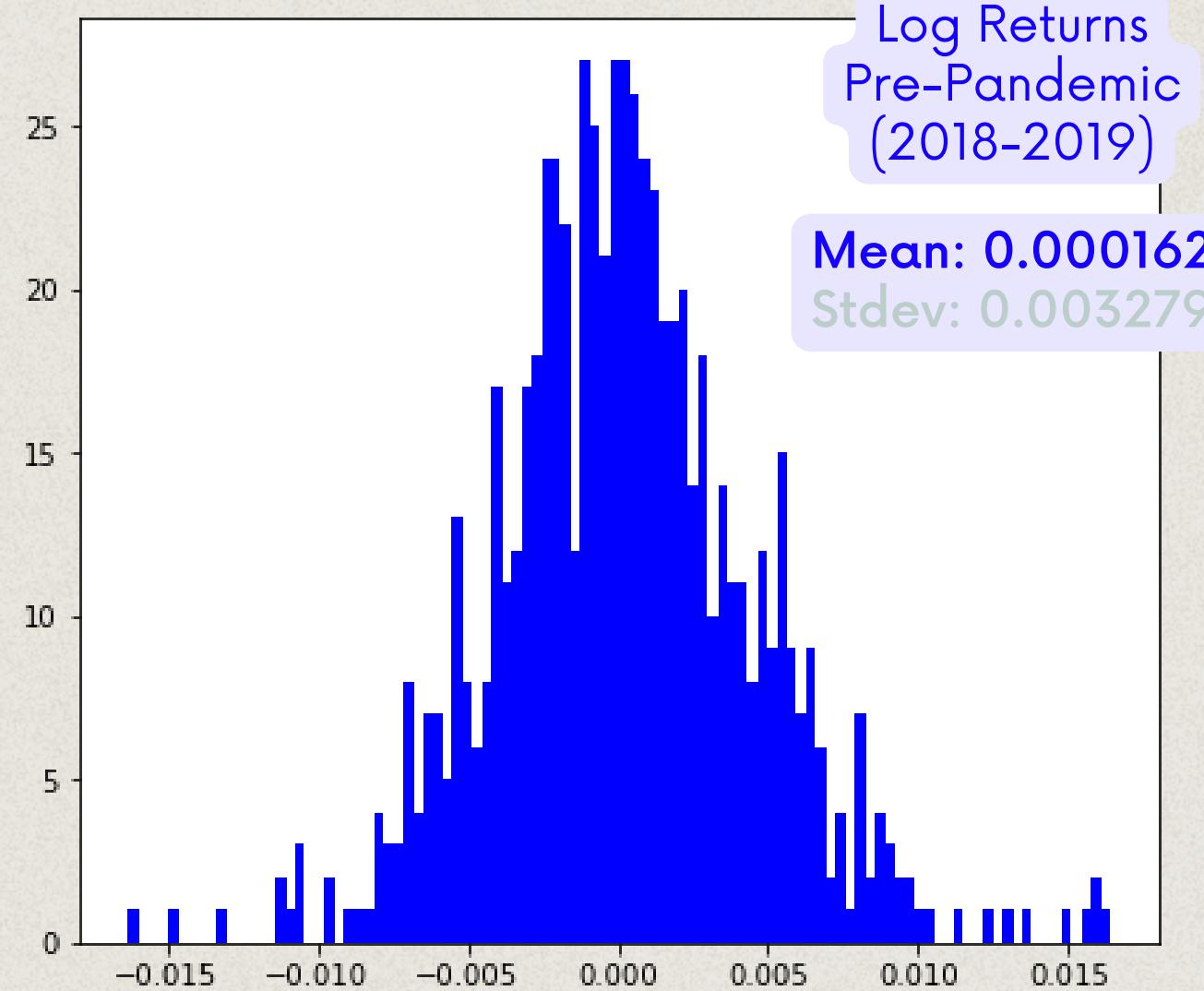


TWO-SAMPLE T-TEST (ONLY ON MEANS)

NULL: mean of log returns are not significantly different between time periods

ALTERNATE: mean in our observation period is greater

BASE GAINS

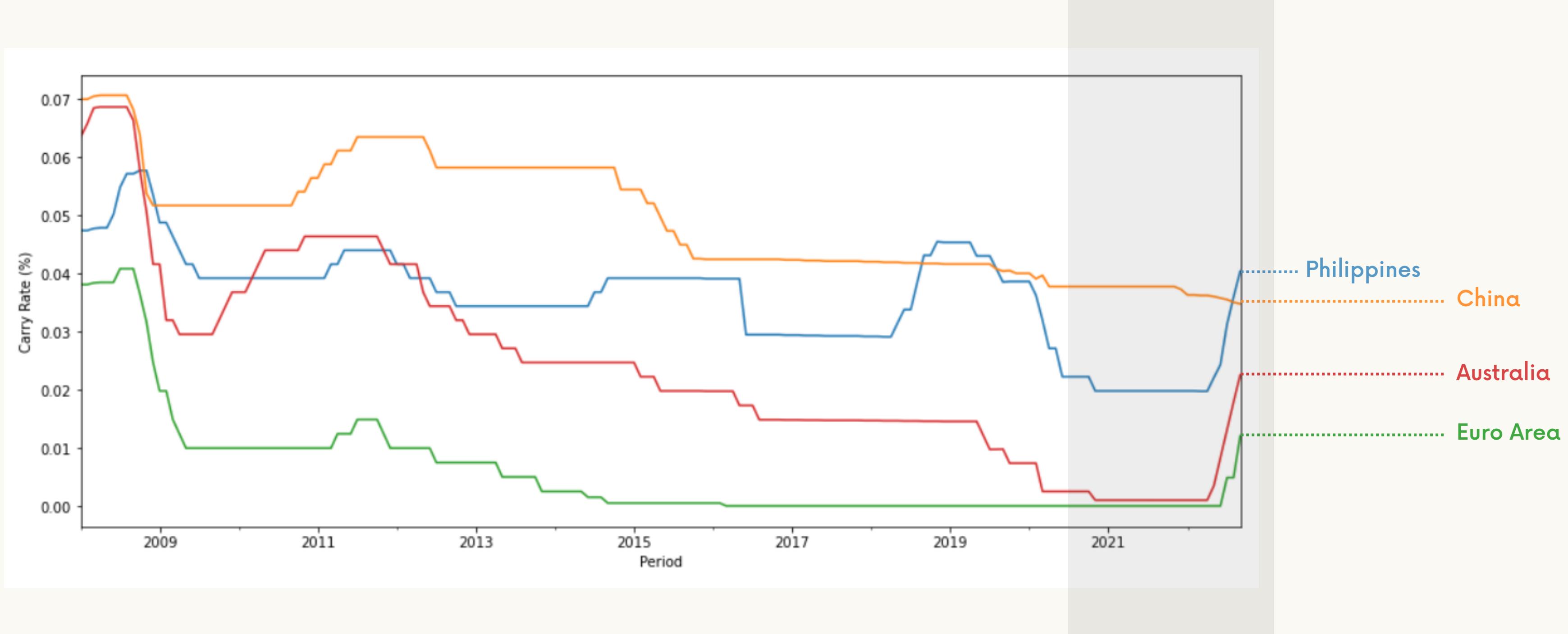


p-value: 0.405777

NULL: mean of log returns are not significantly different between time periods

ALTERNATE: mean in our observation period is greater

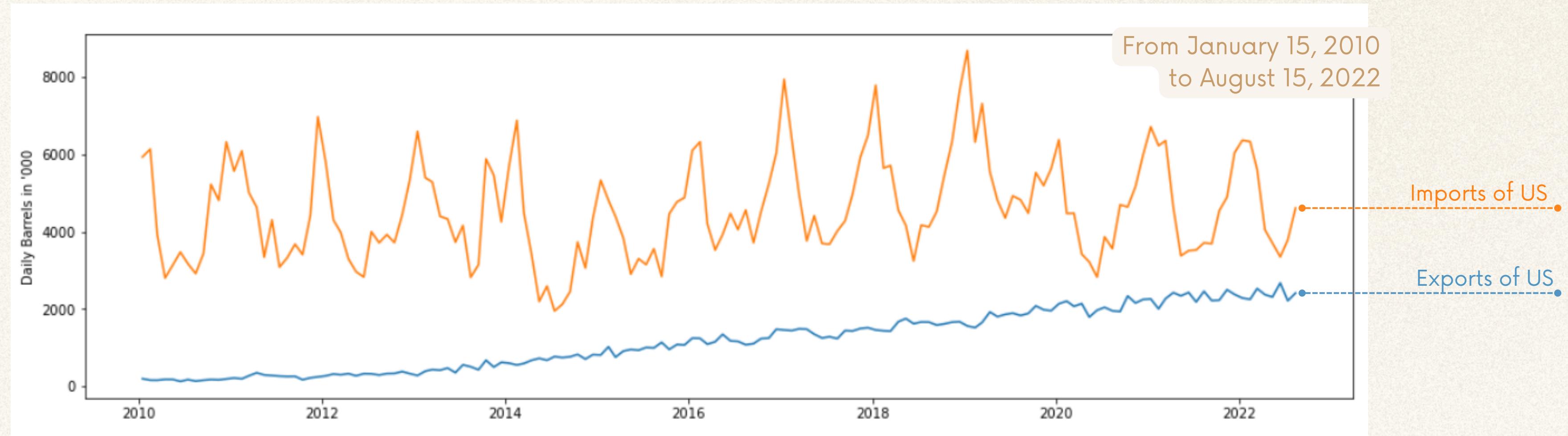
CARRY RATES



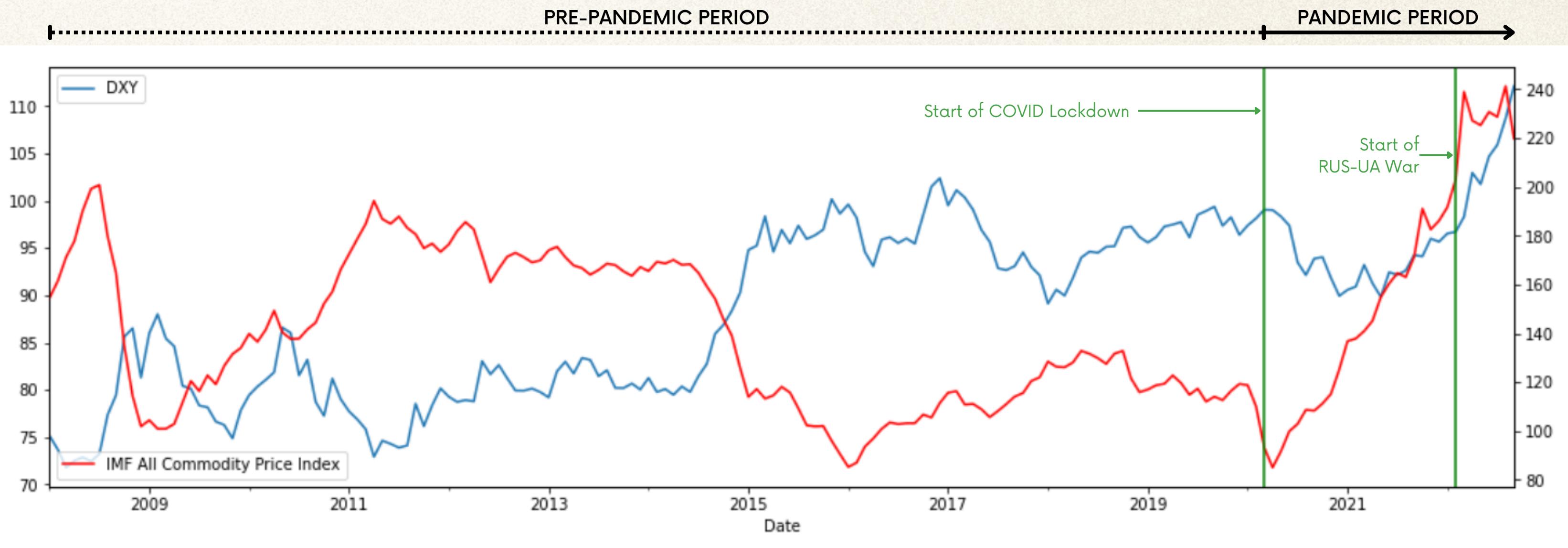
FINDINGS & INSIGHTS

ENERGY SHIFT

NATURAL GAS



DOLLAR VS. COMMODITIES



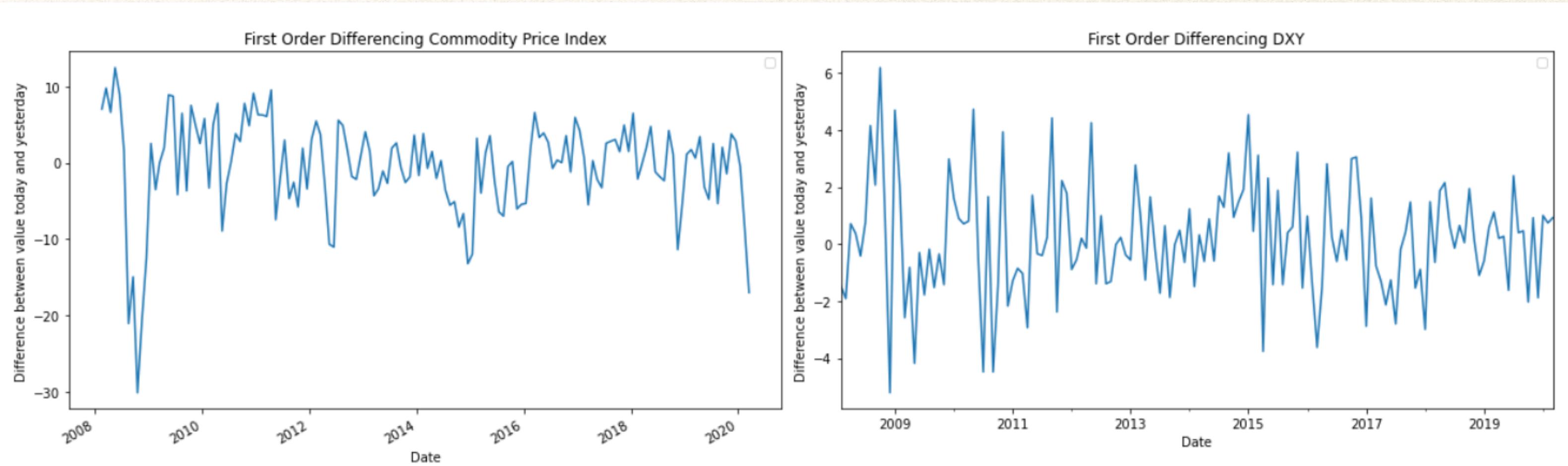
AUGMENTED DICKEY FULLER TEST (ADF)

NULL: unit root does not exist, non-stationary

ALTERNATE: unit root exists, stationary

IDX & DXY 2008-2020

FIRST ORDER DIFFERENCING



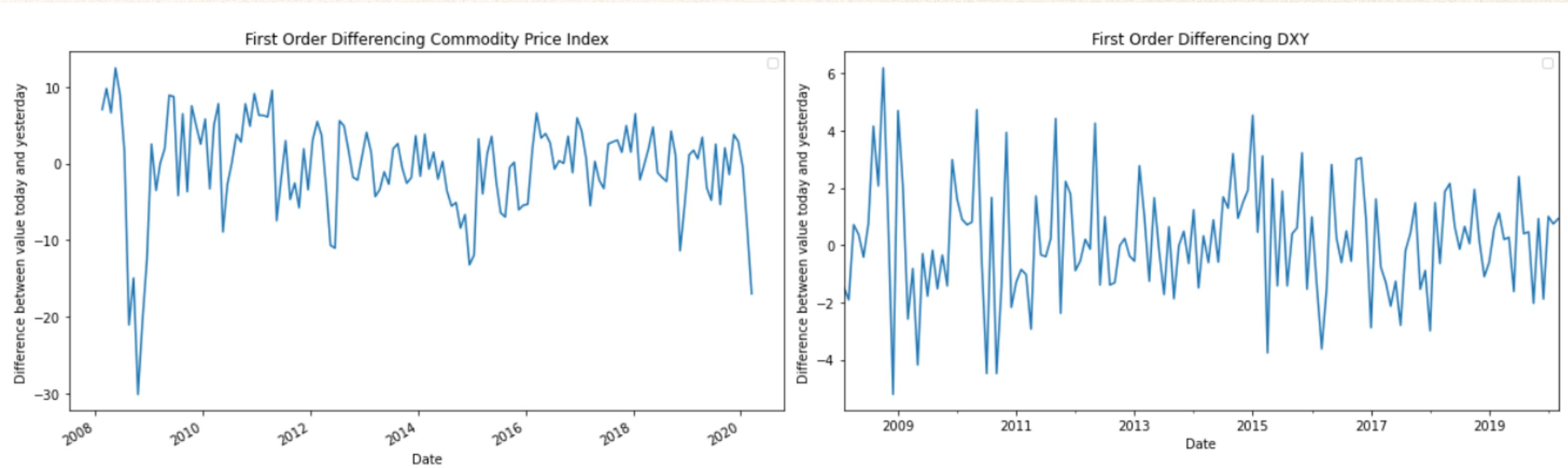
IDX DIFFERENCED
ADF: -6.397074
p-value: 0.0000

ADF TEST
NULL: unit root does not exist, non-stationary
ALTERNATE: unit root exists, stationary

DXY DIFFERENCED
ADF: -5.978238
p-value: 0.0000

IDX & DXY 2008-2020

FIRST ORDER DIFFERENCING



SPEARMAN'S RHO

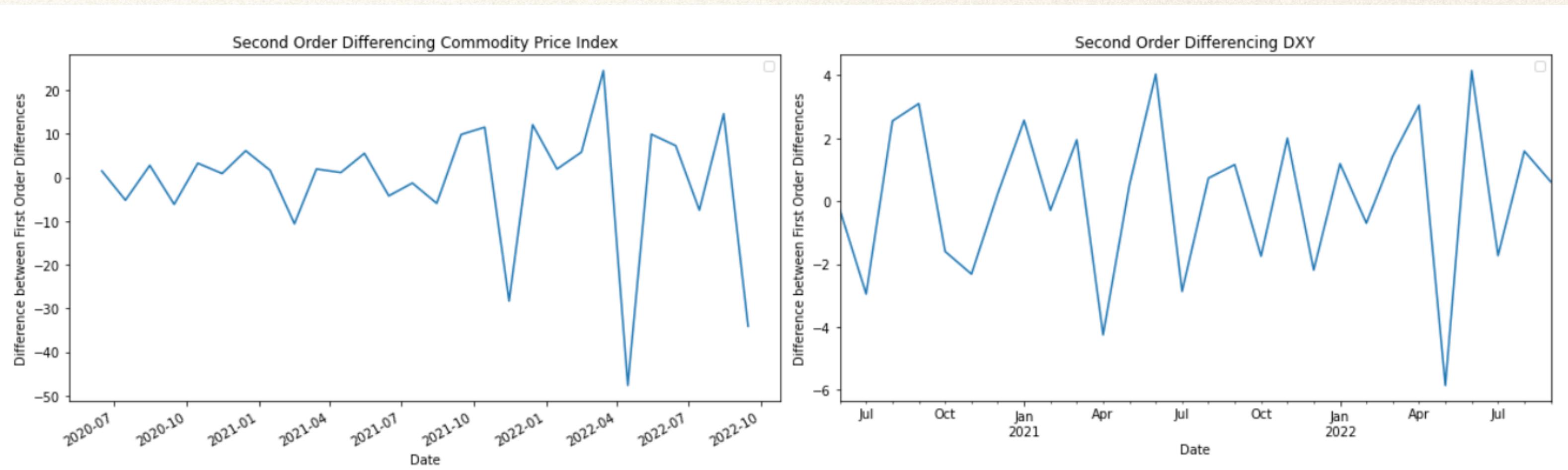
Pearson Correlation from January 1, 2008 to March 16, 2020: **-0.347468**

Spearman Correlation: **-0.270949** or equivalent p-value of **0.000940** (statistically significant)

NEGATIVE CORRELATION EXISTS FOR THE PRE-PANDEMIC PERIOD (2008-2020)

IDX & DXY 2020-2022

SECOND ORDER DIFFERENCING



IDX DIFFERENCED
p-value: 0.0088

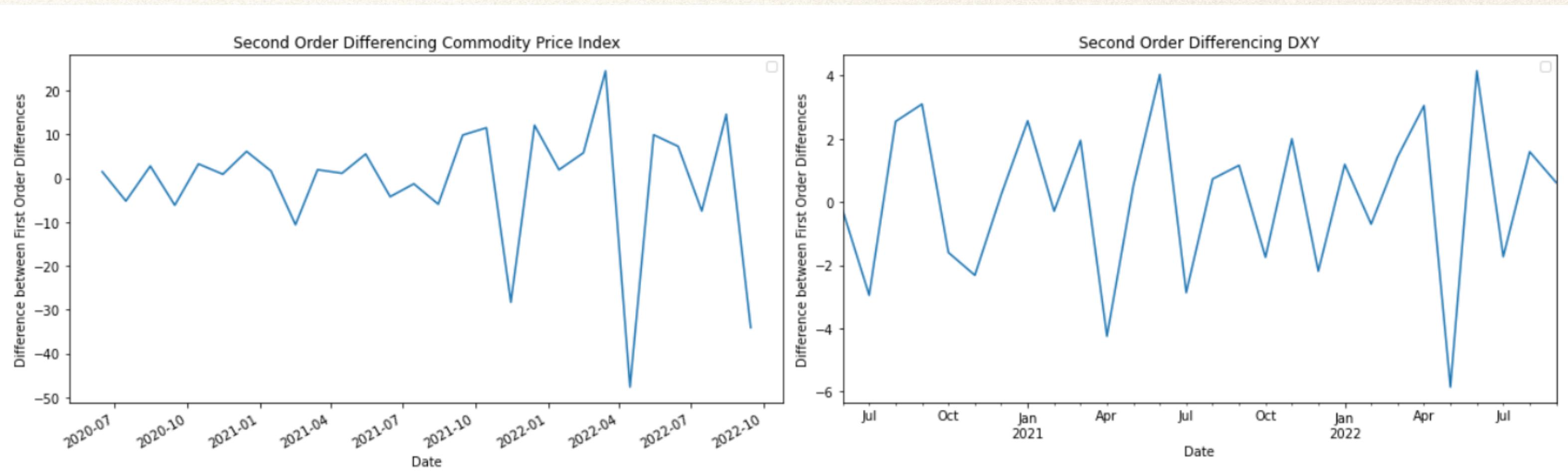
ADF

NULL: unit root does not exist, non-stationary
ALTERNATE: unit root exists, stationary

DXY DIFFERENCED
p-value: 0.0830

IDX & DXY 2020-2022

SECOND ORDER DIFFERENCING



SPEARMAN'S RHO TEST

Pearson Correlation from April 1, 2020 to September 30, 2022: **-0.222410**

Spearman Correlation: **-0.111658** or equivalent p-value of 0.571613 (statistically insignificant)

NO CORRELATION EXISTS FOR THE PANDEMIC PERIOD (2020-2022)

DOLLAR VS. COMMODITIES

STATISTICAL TESTS AND RESULTS SUMMARY

PERIOD	PRE-PANDEMIC		PANDEMIC	
	IDX	DXY	IDX	DXY
DOLLAR VS. COMMODITY				
ADF	-6.397074	-0.456262	0.766359	1.383801
P-VALUE	0.3007	0.9003	0.9911	0.9970
P-VALUE (FIRST ORDER DIFFERENCED)	0.0000	0.0000	0.3865	0.9514
P-VALUE (SECOND ORDER DIFFERENCED)	N/A	N/A	0.0088	0.0830
PEARSON CORRELATION	-0.347468		-0.222410	
SPEARMAN CORRELATION	-0.270949		-0.111658	
P-VALUE (SPEARMAN CORRELATION EQUIVALENT)	0.000940 (significant)		0.571613 (insignificant)	

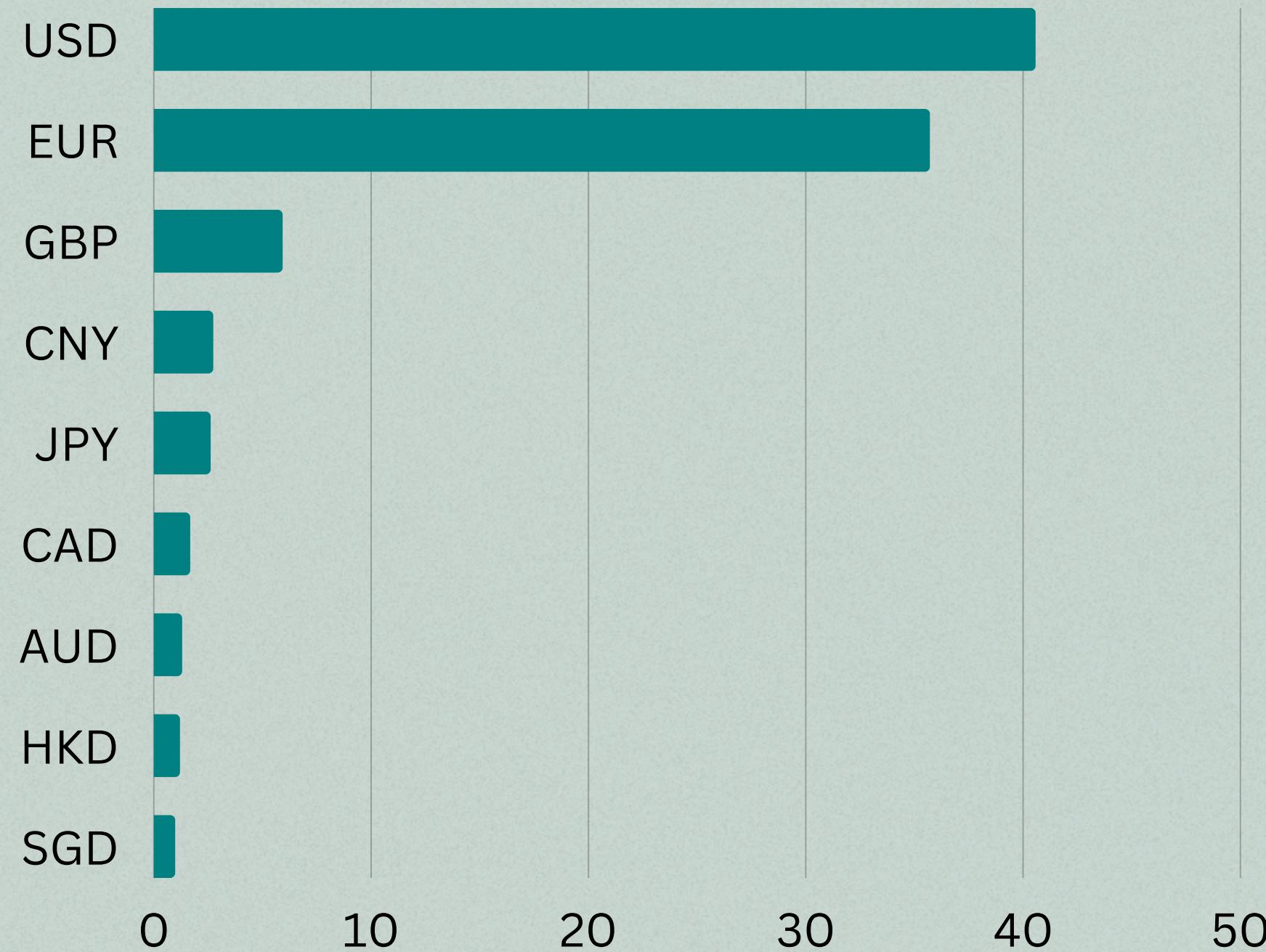
NEGATIVE CORRELATION
EXISTS
(2008-2020)

NO CORRELATION EXISTS
(2020-2022)

ADF TEST

SPEARMAN RHO

PERCENTAGE VOLUME OF TOTAL TRADE



Should Filipino Care?

YES

Inflation is the enemy now.

CONCLUSION

**THE DOLLAR IS STILL
OUR PROBLEM AS FILIPINOS.**

*The strengthening dollar directly affects domestic prices as **a double-edged blade**: as the USD strengthens, so do commodity prices in the short term, trickling down to all consumers.*

THANK YOU!

MSDS 2023 T2 LT5

