USD and EURO Exchange

DECISION MAKING BASED ON HYPOTHESIS TESTING

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Introduction

This analysis is based on the U.S. Dollar and the EURO (EXUSEU.xls, 2018).

The data set is analyzed in SAS Studio using a series plot and descriptive statistics (SAS Studio, 2021).

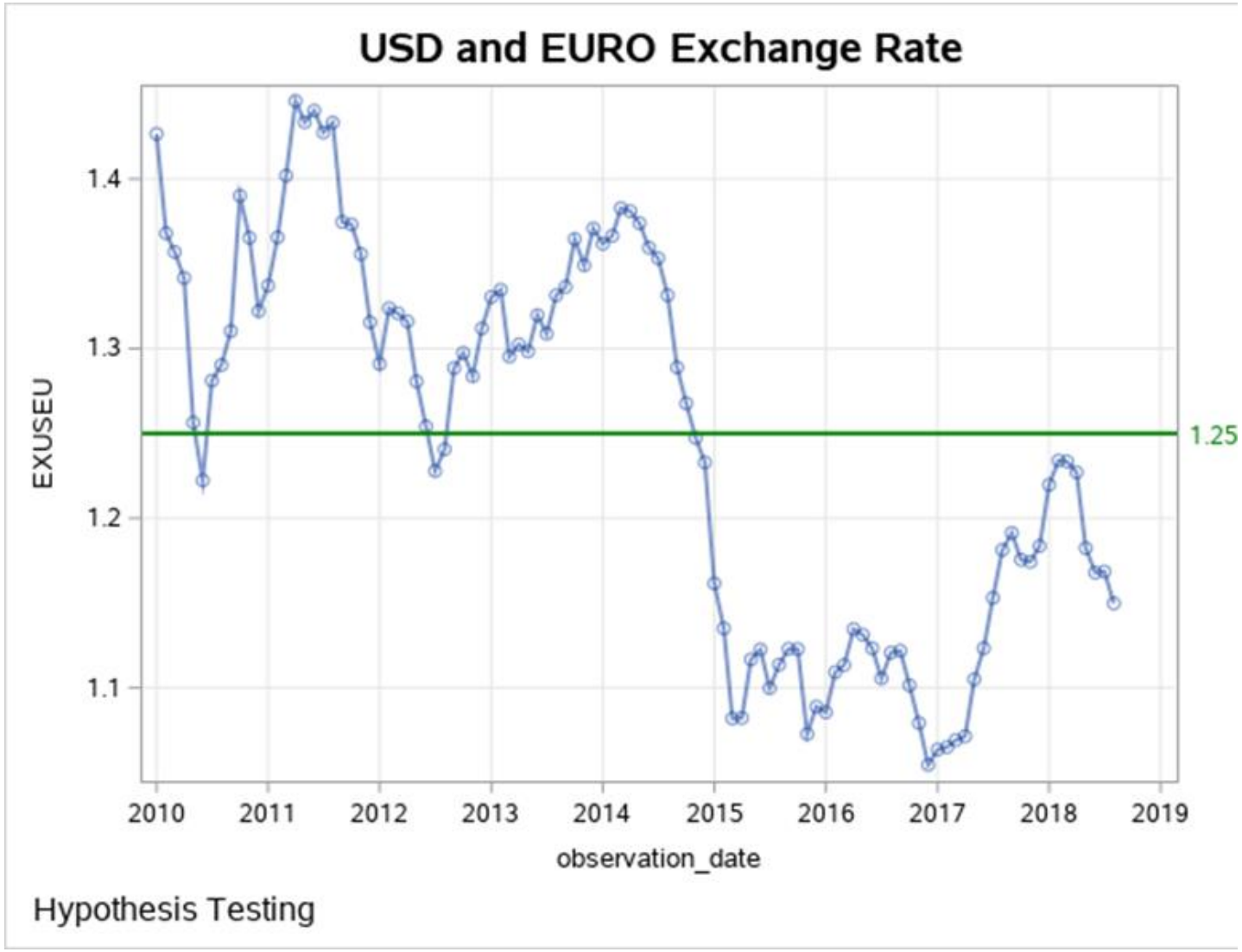
Analysis shows the data is not statistically significant, so a mean cannot be inferred for the population with this data set.

Series Plot Data Summary

Comparable to the scatter plot, this graphic uses the Cartesian coordinate system to display changes over time.

The graphic illustrates a decline from 2010 to 2018.

The green reference line shows a hypothetical mean of 1.25.



Descriptive Statistics

This graphic uses the SAS Time Series Exploration task to generate the summary statistics.

The standard deviation for this data set is 0.113076, showing there is little variation in the data over time.

The average of the exchange rate over time is 1.247121 and is a good representation of the center because of the limited variation.

Time Series Descriptive Statistics	
Variable	EXUSEU
Number of Observations	104
Number of Observations Used	104
Number of Missing Observations	0
Minimum	1.0545
Median	1.27415
Maximum	1.446
Mean	1.247121
Standard Deviation	0.113076

T-Test Including the P-Value

N	Mean	Std Dev	Std Err	Minimum	Maximum
104	1.2471	0.1131	0.0111	1.0545	1.4460

Mean	95% CL Mean		Std Dev	95% CL Std Dev	
1.2471	-Infty	1.2655	0.1131	0.0995	0.1309

DF	t Value	Pr < t
103	112.47	1.0000

The significance level is 0.05 for the data set, so the confidence interval is 95%.

The degrees of freedom is 103.

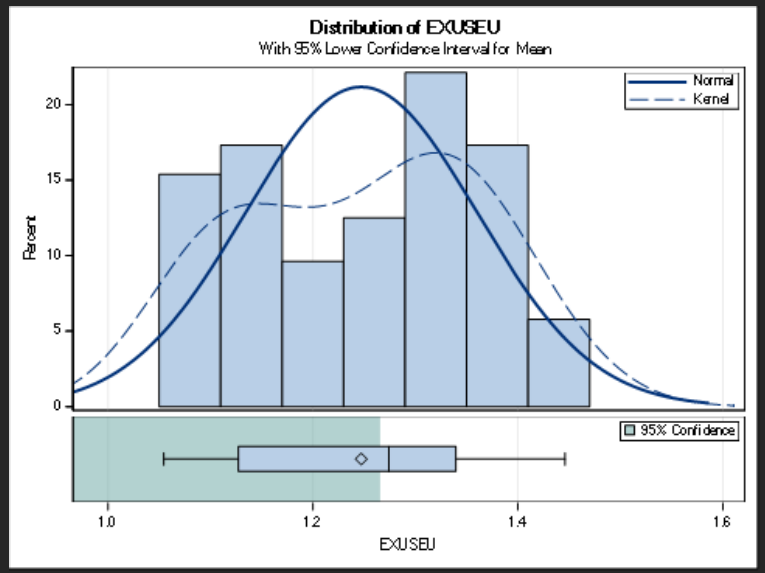
The t-value is 112.47.

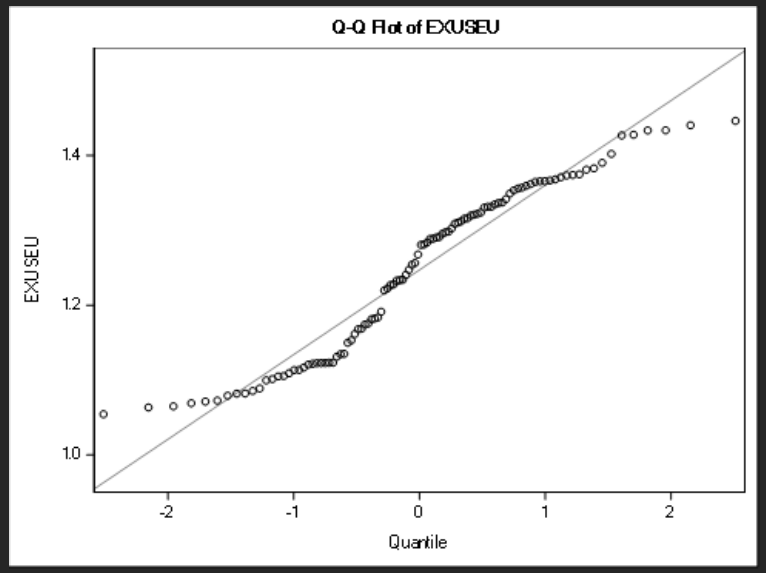
The p-value is 1, which is greater than the significance level.

Distribution of the data set is not normal as indicated by the dashed line on the Distribution of EXUSEU graphic.

The solid bell shaped line shows a normal distribution.

The Q-Q Plot of EXUSEU shows minor deviations from a normal distribution.





Analysis

The null hypothesis for this dataset is that data is not significant enough to infer a 1.25 exchange rate mean.

The alternate hypothesis is that the dataset is significant enough to infer a 1.25 exchange rate mean.

T-Test Including the P-Value indicate the data set for this analysis is not normal.

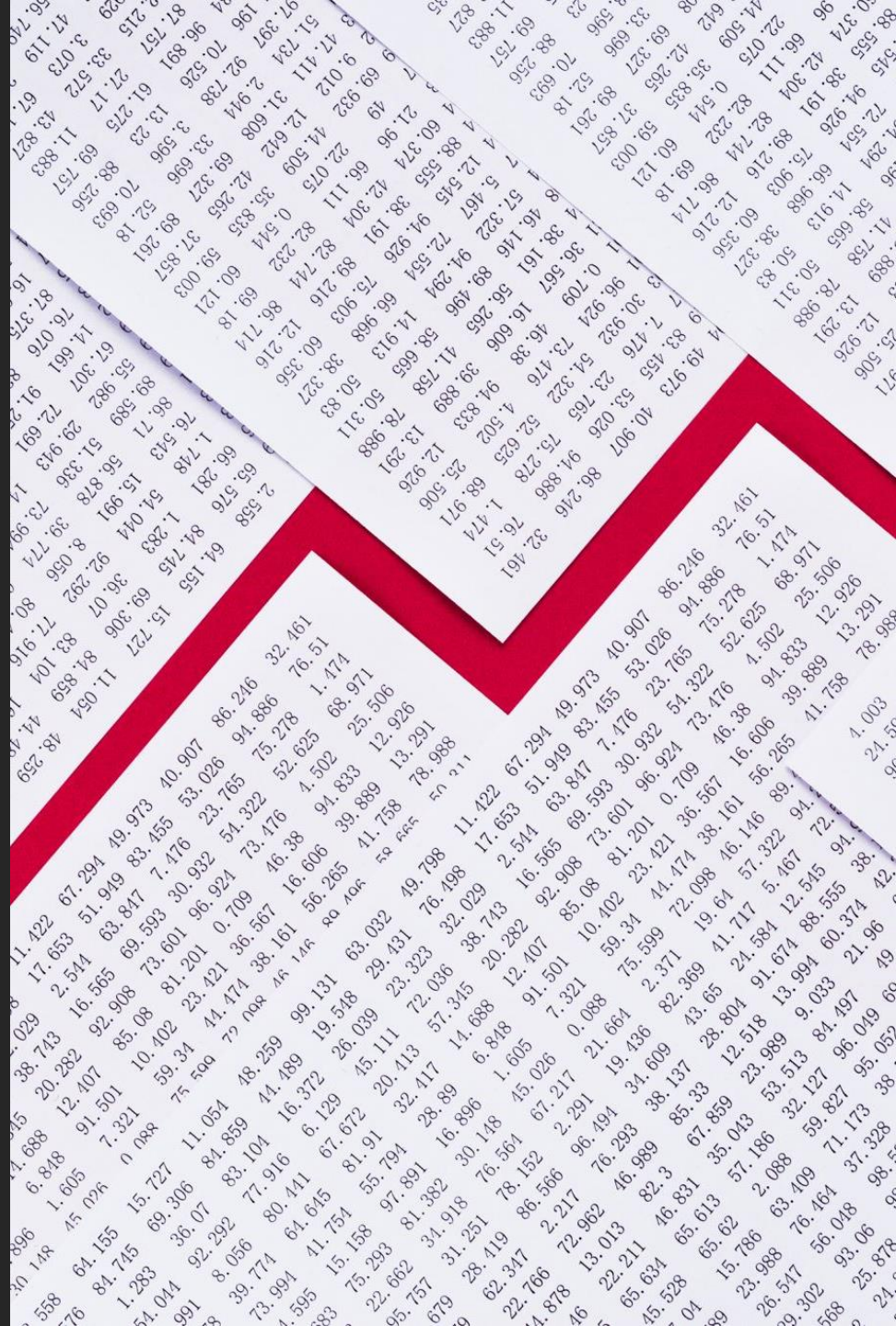
Conclusion

There is not enough statistical difference in the data to safely reject the null hypothesis.

The distribution of the data is not normal.

It is difficult to infer a mean of 1.25 for the population even though the sample mean is 1.2471.

The null hypothesis is true.



References

EXUSEU.xls. (2018). [Dataset]. Colorado State University - Global Campus.

SAS Studio. (2021). [SAS OnDemand for Academics]. SAS Institute, Inc. https://welcome.oda.sas.com/login